

369 PRACTICAL JOB POINTERS



**FROM THE
AMERICAN BUILDER
105 W. ADAMS STREET
CHICAGO**

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Paul O. Dransfield
1937

369 Practical Job Pointers



FROM
AMERICAN BUILDER

The Business Journal of the Active Men
of the Building Industry

105 West Adams Street
CHICAGO

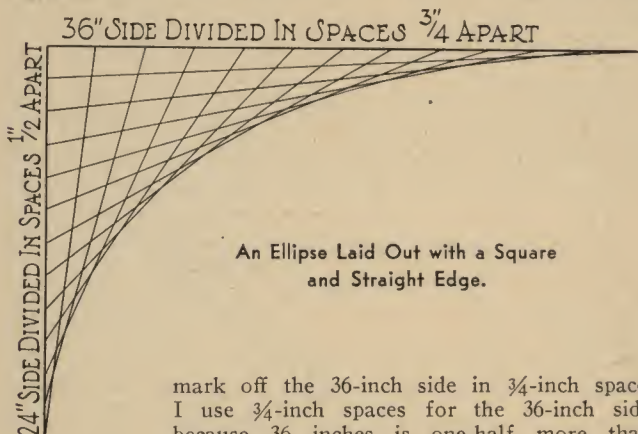
New York
Washington

Cleveland
San Francisco

Ellipse by Square and Straight Edge

THE sketch shows my method of laying out an ellipse. I have used this method for several years and find it most convenient because the only thing required is a square and straight-edge.

I first mark off the 24-inch side in $\frac{1}{2}$ -inch spaces and then



An Ellipse Laid Out with a Square and Straight Edge.

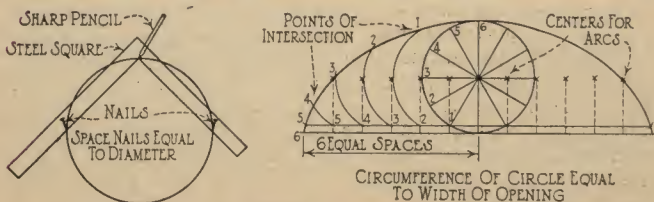
mark off the 36-inch side in $\frac{3}{4}$ -inch space. I use $\frac{3}{4}$ -inch spaces for the 36-inch side because 36 inches is one-half more than 24 inches so the spaces should be one-half larger. Using the straight edge I connect the marks on the 24-inch side with the marks on the 36-inch side as shown. This method produces an accurate ellipse. The same method can be applied to an ellipse of any size.

C. C. MERCER, Box 4, Harrisville, Ohio.

Drawing an Arc

HERE are two sketches that I find are quite handy. By the method of drawing a circle with the steel square and nails, use this circle as described, and on a center line in the sketch at left draw circles, and intersect the contact points as drawn. A very good arch can be formed for a recess bath or many other places where an arch may be used.

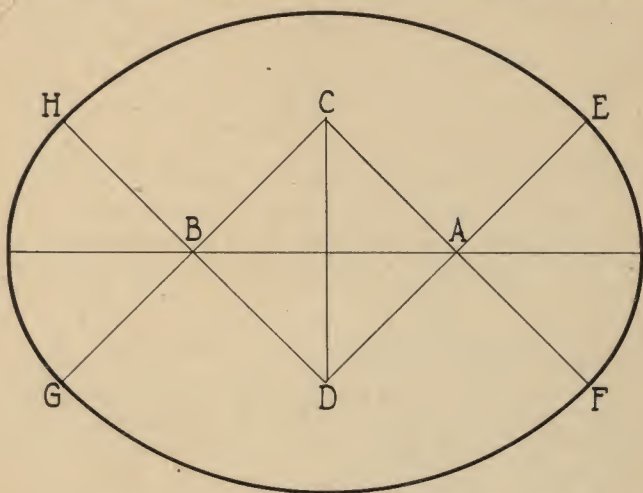
ALLEN C. HART, 3913 Electric Ave., Port Huron, Mich.



A Good Arch for Recessed Bath or Other Place May Be Secured by This Method.

Ellipse by Compass Method

THE sketch shows an easy way to lay out an ellipse with satisfactory curves. First draw a square, with horizontal and vertical diagonals, A-B and C-D. Extend the sides of this square to the points E, F, G, and H. Make the lines A-E, A-F, B-H and B-G, equal in length to the sides of the square.



Here is a Simple Method of Laying Out an Ellipse
of Excellent Proportions.

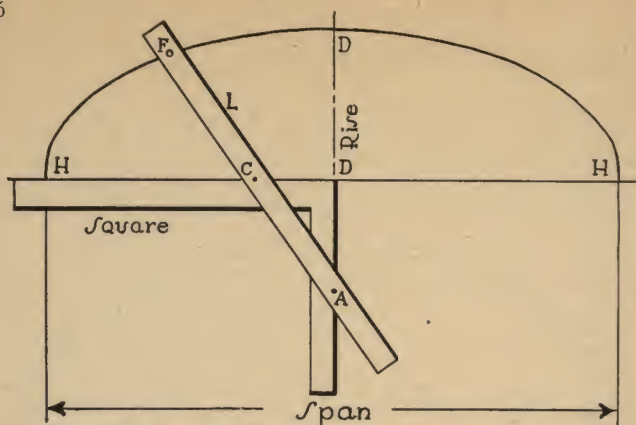
With A for a center, draw the arc E-F, and with B for a center draw the arc G-H. With D as a center and D-E as a radius, draw the arc E-H. With C as a center and C-G as a radius, draw the arc F-G. This completes the ellipse.

KNUT A. WESTHOLM, Seattle, Washington.

Elliptical Arch Opening

HERE is a method of drawing an ellipse which I believe is more accurate for the carpenter to use than any other I have seen. I use it right along and it works most satisfactorily.

First draw the center line and mark the rise, D-D, and the span, H-H. Place the square as shown. Take a small strip of wood, L, and mark on it half the span from A to F. Also mark the rise from F to C. Drive nails at A and at C, so that they protrude through the strip. Bore a small hole, large enough to put a pencil through, at F.



Said to Be More Accurate Than the Cord Method.

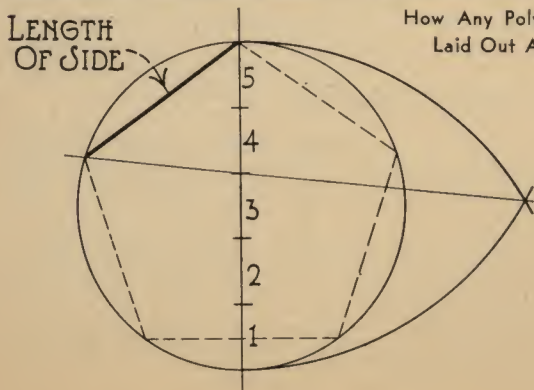
Keep the nails at A and C against the square until half the ellipse is drawn. Then reverse the square and draw the other side of the ellipse in the same way.—A. L. SMITH, Santa Rita, N. M.

To Lay Out a Polygon

HAVE often seen mechanics, when they had to lay out polygons, puzzled to get the side accurate, so will offer the following method of laying out polygons, which is not only simple, but accurate if carefully done.

First strike a circle of sufficient size to enclose the desired polygon. Divide its diameter into as many equal spaces as the polygon has corners. With the intersection of each end of the diameter with the circle as centers and with the diameter as a radius, strike two arcs, letting them intersect outside the circle.

From this intersection of the arcs draw a straight line through the second division point on the diameter until it cuts the opposite side of the circle. From this point, a line drawn to the intersection of the diameter with the circle gives the length of the desired side.—L. M. HODGE, Los Angeles.



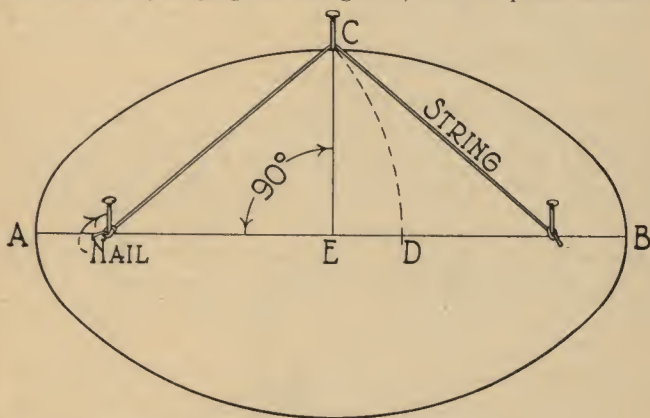
How Any Polygon Can Be Laid Out Accurately.

Ellipse by String and Nail Method

TO lay out an ellipse of any size, first draw a horizontal line A-B, equal in length to the long dimension of the desired ellipse. Next draw a line E-C, at right angles to the horizontal line and of a length equal to half the width of the desired ellipse.

Set the compass for the distance A to C and describe an arc D, using A as a center. Now set the compass for the distance D to E and set off the distance along the line from A and also from B. Drive small nails at these points and also at C. Tie a string to the first two nails passing it around the nail at C, as shown in the sketch.

Pull out the nail at C and put a pencil against the loop of the string and, keeping the string taut, run the pencil around.



Here is a Simple Way to Lay Out an Ellipse
Without Instruments.

I have used this many times for such work as marking the cut for putting 4-inch soil pipe through a half pitch roof which requires an elliptical hole 4 by $5\frac{3}{4}$ inches.

CHARLES C. ORR, R. R. No. 1, Thurman, Iowa.

Squaring Frames

WINDOW and door frames can be very easily and accurately squared by the diagonal method. By this method after the frame is assembled a piece of blind stop or molding is placed in a lower corner of the frame and run to the opposite upper corner and this distance carefully marked. The position of the stick is then changed to measure the other diagonal of the frame and marked. If the marks do not correspond exactly the frame is out of square.

The frame can then be adjusted to where it is square or to

where the diagonals correspond and a brace can be nailed on it to hold it true until it can be placed in the wall.

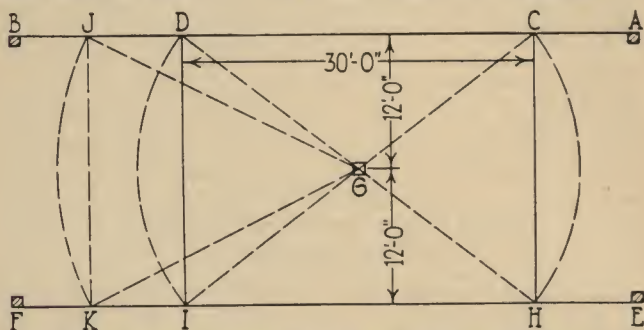
This method is especially useful since it requires no elaborate equipment and also tends to magnify rather than minimize errors in squaring of frames. This method can also be used in erecting framing and studding but a much longer timber will be required. Its main advantage is that it is accurate.

C. L. SMITH, Jackson, Miss.

Squaring with the Steel Tape

It is possible to square off a plot with the steel tape by the following method which is illustrated in the diagram. Begin by stretching a line from A to B on the established building line. Assuming that the building is to be 24 by 30 feet, stretch another line parallel to A-B and 24 feet from it between the points E and F.

Next establish the corner indicated at C and from this measure off 30 feet to the point D. At any convenient point half way between A-B and E-F, drive a stake G. On top of this stake drive a nail so that it will be exactly 12 feet from each line, A-B and E-F. We are now ready for squaring.



The Building Foundation Squared with a Steel Tape Only.

Hook the ring of the steel tape over the nail in the stake G and, taking the distance from G to C, establish the point H on the line E-F the same distance from G that C is. Next take the distance from G to D and establish the point I in the same way. Lines between C and H, and between D and I complete the four sides of the building.

Though the stake G should be placed about half way between the end lines C-H and D-I this is not absolutely necessary as shown by the points J and K substituted for D and I, using C-J as the length of the building instead of C-D.

H. H. SIEGELE, Emporia, Kan.

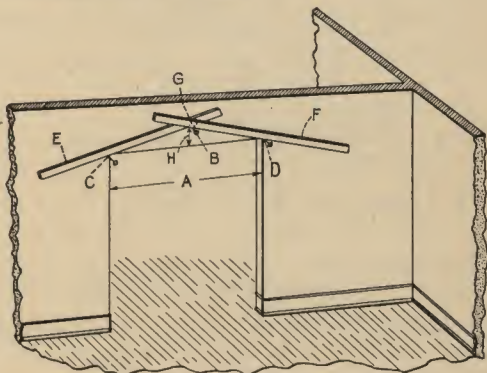
Laying Out an Arch

HERE is a simple method of laying out an arch, or drawing an arc of a circle through any three given points:

When given the width of archway "A" and height of arch "H", to draw an arc through points "B", "C" and "D".

1. Insert nails at points B, C and D.
2. Lay straight edged boards at E and F along nails B and C and B and D intersecting at point G.
3. Fasten securely at G.
4. Remove nail at B.
5. By holding a pencil at intersection (B), and sliding boards across nails C and D a perfect arc will be formed which will pass through points B, C, and D.

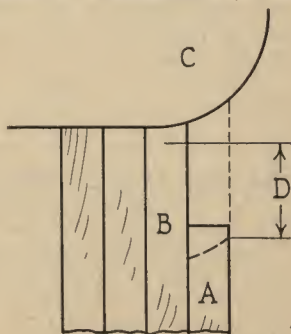
Method of
Laying Out
Arch for Par-
tition or Fire-
places Simpli-
fies Problem.



This method may be used to advantage when laying out an arc of a circle when given any three points, especially when the center is inaccessible.—M. L. MANCHESTER, Liverpool, N. Y.

To Fit a Curve

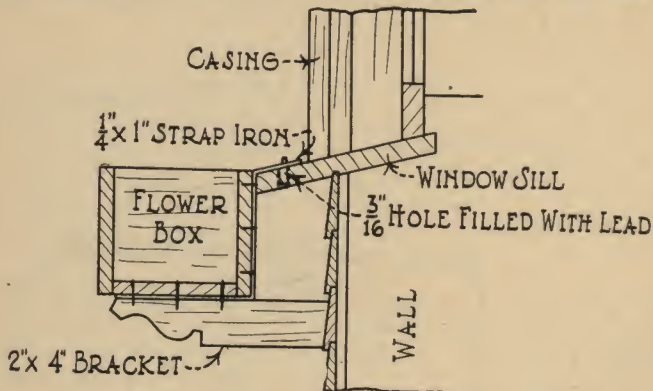
IN FITTING flooring to the curve of a bathtub or of a rounded stair riser, a perfect fit may be easily obtained by the following method. To fit board A to curve C: Lay the board several inches away from the curve and engage groove of A with tongue of B. Set compass at any convenient distance D, then scribe line as shown on A. Be careful to hold the compass always in the same plane as the line of the flooring, i. e. both contact points of the compass move simultaneously.—RICHARD B. FOX, Mt. Pleasant, Penna.



An Easy Way to Fit Curve
Tightly.

Hanging Window Boxes

THE sketch shows a way of hanging window boxes which makes them easy to remove, and requires no brackets on the wall to rot out. Drill a $\frac{3}{8}$ -inch hole almost through the sill and fill it with white lead. Screw a $\frac{1}{4}$ -inch lag into the hole within $\frac{3}{4}$ of an inch of the head and saw off the head.



Window Boxes Hung in This Way Can Be Instantly Removed and There Are No Brackets to Rot the Wall.

Next take a piece of strap iron, $\frac{1}{4}$ inch thick and 1 inch wide, and bend it as shown. Drill a $\frac{3}{8}$ -inch hole in this for the lag screw and holes to receive screws for attaching to the bottom of the box. Two pieces of strap iron are enough for each box and, of course, there must be a lag screw in the sill for each strap.

Cut two pieces of wood in an ornamental bracket style, as shown, and fasten these to the ends of the box. The ends toward the wall should be cut to fit against the wall. These are not fastened to the wall, but serve as braces. The box can be removed at any time by herely lifting the straps off the lag screws.

A. H. OLSON, 51 E. Main St., North East, Pa.

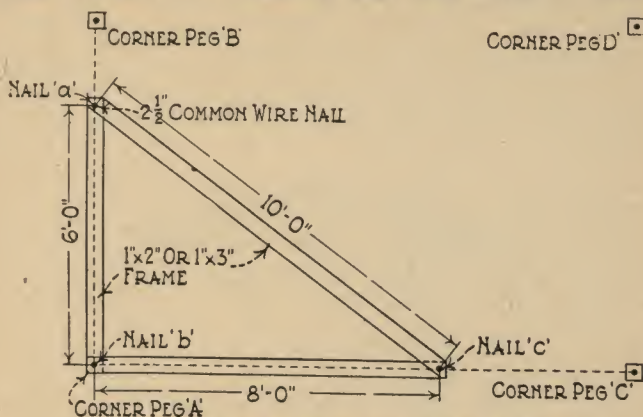
Placing and Leveling Corner Pegs

TO place corner pegs and level in one operation, place the frame over the corner peg "A," as shown in the sketch, with a nail "a" driven far enough through the frame to just enter the peg. Place the straight edge on the heads of nails "a" and "b," and nails "b" and "c," and level up by means of shims.

Next sight along the heads of the nails "a" and "b" to locate the corner peg "B" and sight along the nails "a" and

"c" to locate the corner peg "C." In this way you get these corner pegs level at the same time that you place them square.

Locate corner peg "D" by measuring with the tape from pegs "B" and "C." Check all pegs from corner to corner



Corner Pegs Can Be Placed and Leveled in One Operation by Using This Method.

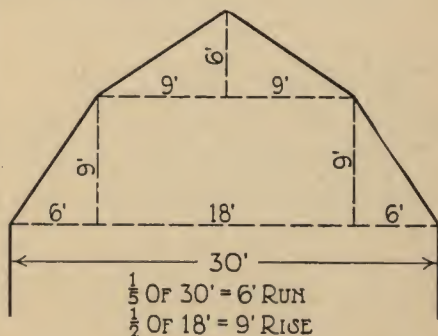
to assure accuracy. The nails in the corners of the frame should be driven in the same distance to give an accurate level.

BERT E. PARKER, Box 838 Weyburn, Sask.

Gambrel Roof Proportions

HERE is a rule for producing a correctly proportioned gambrel roof. Set the purlin posts in from the outer wall one-fifth the width of the building. Make them as high as half the distance between them.

Reverse these measurements for the top span. This makes both top and bottom rafters the same



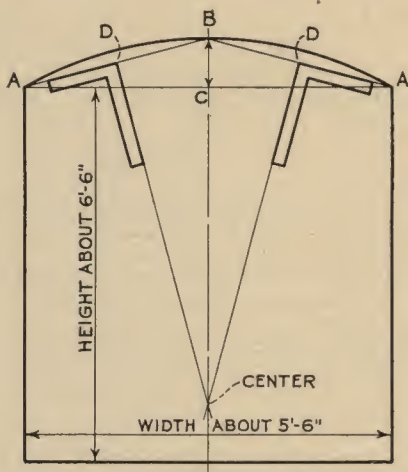
This Method Will Produce a Well Proportioned Gambrel Roof.

length, except for any projection that may be added at the eaves, the sketch shows just how these measurements are used.

ARNOLD E. MILLER, Agosta, Ohio.

Uses Square to Lay Out Arch

HERE is my way of drawing or laying out an arch with a steel square and a simple method of finding the center point. BC is the center and A the height of the arch. Just draw a line from A to B. Then find the center (D) on AB and use your steel square to draw lines at right angles until they meet, which is the center point. If this idea is published, renew my subscription to the AMERICAN BUILDER AND BUILDING AGE for another year, and I will pay 50 cents extra.—C. A. OSTIGNY, Granby, Que.



Quick Way to Lay Out Arch.

"Early-Man" Cuts Costs

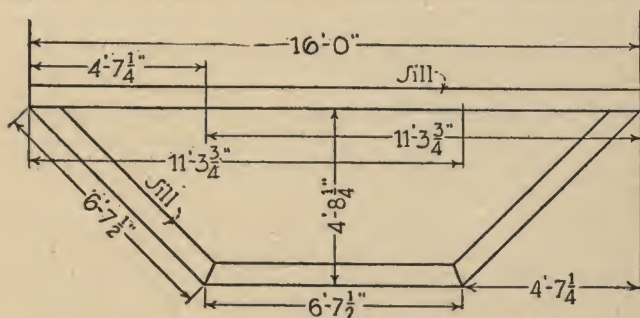
THIS summer our firm had a church steeple to repair and the street had to be roped off while the men were working but not at any other time. To have the men all come to work at the usual hour entailed a lot of wasted time so we had one old fellow who had been with us a long time come on the job at 6:30. He roped off, mixed mortar and had all arranged for the men when they arrived one hour later. This man is not particularly valuable to us when on a job with other workers. He is faithful but slow. Since summer, however, we have been using him to come on the job and prepare everything for the regular force. He is faithful, interested and experienced and has been more valuable to us than ever before. It means a lot to have a force start right to work with no hunting for tools or material. No other firm here seems to be doing this little stunt, yet it is a time saver.

E. C. BAGGOTT, 2229 Eutaw Place, Baltimore, Md.

Laying Out an Octagon Bay

THE accompanying sketch illustrates a method, which I find both simple and accurate, for laying out a three sided bay in octagon form. The method is best described and illustrated by using an example. Suppose the room to which the bay is to be framed is 16 feet wide and the bay is to extend the full width. With inches representing feet, take the room width, 16 feet, on each arm of the square and measure across. You will find that this is $22\frac{5}{8}$ inches, representing 22 feet $7\frac{1}{2}$ inches. Divide this by two, which gives you 11 feet $3\frac{3}{4}$ inches.

From the left corner of the room, measure off this distance, 11 feet $3\frac{1}{2}$ inches, mark the point and repeat this measurement from the right hand corner. Squaring out from these two points locates the extreme corners of the octagon. The distance out from the main wall is found either by measuring from the points to the nearest corners of the room or



This Shows a Simple and Accurate Method of Laying Out a Bay by Means of a Steel Square.

by subtracting 11 feet $3\frac{3}{4}$ inches from 16 feet. The result is the same either way.

If you want the middle section of the bay wider than the other sides, say two feet wider, add one foot to the 11 feet $3\frac{3}{4}$ inches. This gives you 12 feet $3\frac{3}{4}$ inches. Proceed as before, using this measurement instead of 11 feet $3\frac{3}{4}$ inches.

JAMES F. FAIL, 815 A St., Meridian, Miss.

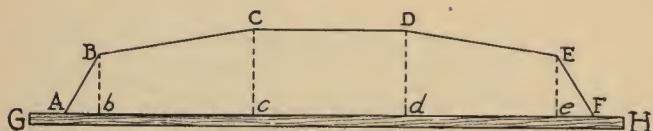
To Sharpen Dull Files

TO sharpen a dull file all that is required is a little sulphuric acid solution and some ammonia. Dip the file into the acid for a few minutes then remove it and wash it off with ammonia. The acid eats the steel filings which lodge between the teeth of the file and cause the dullness. The ammonia neutralizes the acid, too, and prevents any eating of the file itself after the filings have been eaten away.

RALPH KRASKY, 1335 5th St., N. E., Minneapolis, Minn.

Laying Out Irregular Shelves

THE accompanying sketch shows a practical method of fitting a shelf to an irregular cupboard. The line A-B-C-D-E-F represents the line of the back of the cupboard. Instead of using a bevel square to get all these angles and lay them out, I fasten a straightedge across the front of the opening, represented by G-H. Then with an ordinary square, placed on the straightedge, I square back to the points B, C, D, and E,



Irregular Shelves Laid Out in This Way Will Fit Like Cabinet Work.

get the exact measurements from the straightedge to these points, and locate the points b, c, d and e.

These measurements can be easily and quickly transferred to the board which is to be used as the shelf and when it is cut accordingly, the shelf will fit the cupboard like cabinet work.

Another suggestion which may prove useful is in regard to the settling of nails in blind nailing flooring, several gadgets for which have been described. Why not use your nailset which is always in your pocket or tool box and save carrying around another tool. Hold the nailset by the small end, place the other end on the nail head and hit the nailset.

If anyone is still using any sort of a file for this purpose he will do well to take it to a blacksmith and have it softened. Files are very hard steel and are apt to fly when pounded. I have seen two men with an eye gone as a result of hammering on a file.

C. E. STACY, Shattuckville, Mass.

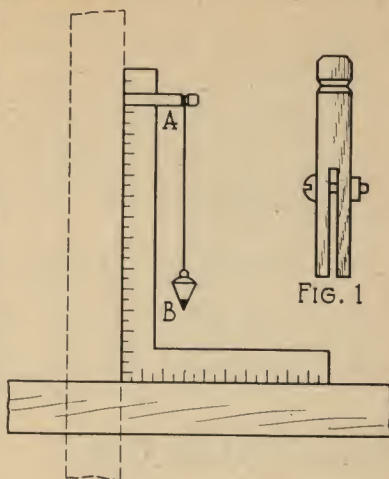


Leveling with a Square

TO level with a square, fasten a clamp (shown in figure 1) to a vertical arm and attach a plumb bob to the clamp. When the distance between the string and the vertical arm, at the point B, is equal to the distance between the string and the vertical arm at the point A, the surface on which the lower arm rests is level.

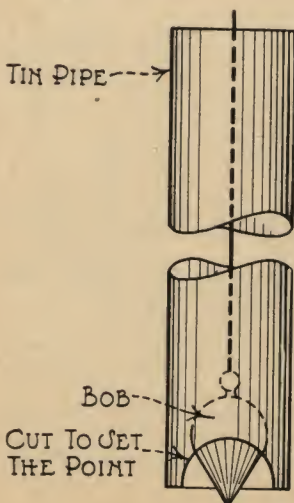
To plumb with a square, fasten the clamp the same way as in leveling and attach the bob. Then set the arm on which the clamp is fastened against the object to be plumbed.

JAKE VANDERMEULEN, Berwyn P. O., Route 1, Box 113, Stickney, Ill.



A Square and Bob Serve to Level or Plumb.

To Use a Bob in the Wind

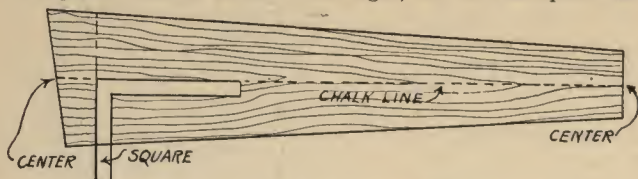


IT is impossible to use a plumb bob when the wind is blowing unless some means is provided to protect the bob from the wind. A simple and effective means of protecting the bob is to use a piece of tin pipe, as shown in the sketch. Hang the bob inside the pipe. A small section of pipe can be cut away at the bottom to set the point and an accurate setting can be made and kept.—JOSE E. BERROCAL, Fajardo, P. R.

This Bob Is Not Affected by Wind.

Squaring a Tapered Column

NOTICE in the November issue a method of squaring a tapered column which is all right, but not as quick and



Tapered Columns Can Be Squared Quickly and Accurately by This Simple Method.

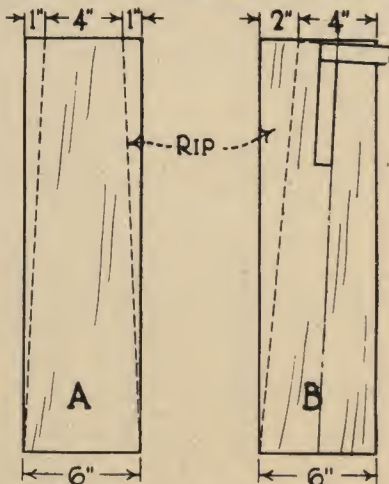
easy as the method I use. I mark the center of the column at each end and strike a chalk line down the column. I then square off each end from this line as shown in the sketch.

GEO. C. NATTER, Phoenixville, Pa.

Making Tapered Posts

WHEN laying out material for tapered posts, most workmen square all their stock on the ends and then lay off the amount of taper on each side of the board at the top and rip each side. This is a tedious job which can be made much easier by using the method illustrated in the sketch.

Suppose we have a post measuring six inches at the bottom and four inches at the top. This requires a 1-inch taper on each side, as in the drawing "A." My method is to lay off two inches on one side at the top and draw a line to the bottom corner, as in drawing "B." After ripping down this line I have a piece six inches at the bottom and four inches at the top, but the ends are not square.



This Method of Cutting Tapered Columns Saves Half of the Usual Sawing.

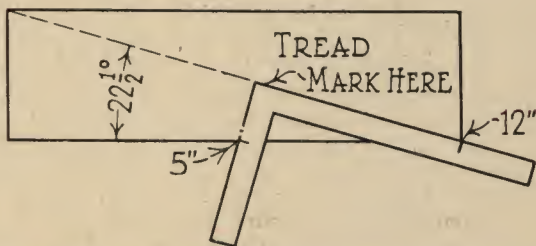
To square the ends, obtain the center points on the top and bottom edges and draw a line between them. Square the ends from this line. This method saves half the ripping, which means a saving of time and money.

ALLEN HARRIS, R. F. D. No. 2, Jackson, Mich.

Laying Out Winding Treads

THE method I use for figuring winding stair treads is much shorter than the usual way. Suppose four treads are put in at the turn in the stair. Each tread angle should be $22\frac{1}{2}$ degrees. By using the numbers 12 and 5 on the steel

NO. OF TREADS	SIZE OF ANGLE	NOS. TO USE ON THE SQUARE
2	45°	12" : 12"
3	30°	12" : $6\frac{15}{16}$ "
4	$22\frac{1}{2}^{\circ}$	12" : 5"
5	18°	12" : $3\frac{15}{16}$ "
6	15°	12" : $3\frac{1}{4}$ "



With This Table and a Steel Square Treads for Winding Stairs Are Readily Laid Out.

square you can get $22\frac{1}{2}$ degrees, as shown in the sketch. Then it is a simple matter to mark off the tread, cut it, and then cut it to length. The table shows the numbers on the square to use for various common numbers of treads.

JAKE VANDER MUELEN, Route 1, Box 229, Berwyn, Ill.

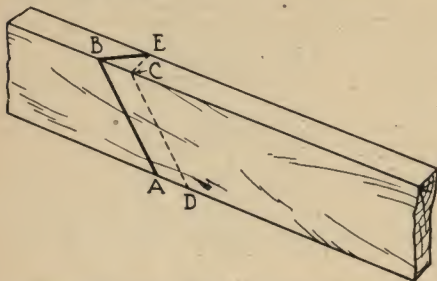
Brick Dust for Acid-Proofing Wood

WHEN it is found necessary to protect small areas in a building from acid, I have found that brick dust, when finely powdered and used in connection with wood tar and resin, a distinct aid. Three parts of the tar by weight, six parts by weight of the resin and four parts by weight of the brick dust makes a very good mix for this purpose. The tar and resin are melted and well stirred together first, after which the brick dust is gradually stirred in. The part to be protected is then painted with the hot mixture.

J. E. HYLER, Peoria, Ill.

Jack Rafter Cutting Simplified

MOST carpenters have little or no trouble in cutting common rafters, but many, lacking a knowledge of geometry, fall down on cutting jack rafters. I use the framing square on which length of rafters per foot of run and side cuts are given but, in the absence of any formula, I have



The Line "E" to "B" Is the Side Cut for a Jack Rafter Easily Obtained by This Method.

same thickness and lay one edge along the line "A-B," marking the other side of the block, establishing the point "C" in the line "C-D." From the point "C," square across the top of the rafter, establishing the point "E." Now, by connecting the points "E" and "B" you have jack rafter side cut.

Either rights or lefts may be cut in this way and by comparing this method with the figures given on the framing square it will be found to tally perfectly. By following this method carefully you will get a "cabinet" job of framing.

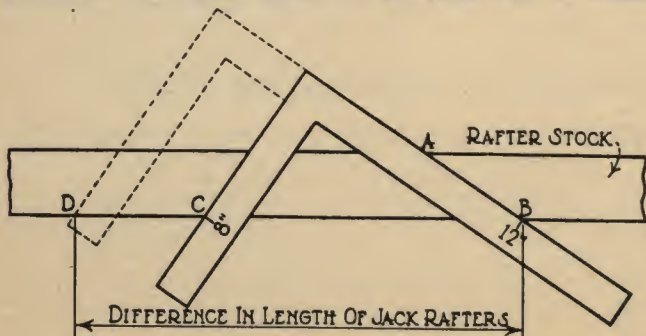
FIELDS M. DUNCAN, Liberty, Mo.

a sure, quick way of getting the side cut of jack rafters against the hip or valley. I believe it would be helpful to a great many carpenters so am passing it along.

Whatever the pitch, mark the plumb cut "A-B" as for the common rafter. Now take a block of the

Length of Jack Rafters

HERE is a method of finding the difference in length of jack rafters regardless of what distance they may be spaced. The square is held to the stock with 12 inches,



How to Find the Difference in Length of Jack Rafters.

the unit of run, on the blade and the rise per foot run (eight inches as shown in the example illustrated in the sketch) on the tongue. Mark, along the blade, line A-B.

Now slide the blade along A-B until the figure representing the spacing of the jack rafters touches the point B. (In the case illustrated the spacing is taken as 20 inches.) The distance D-B will be the difference in length of the jack rafters.

CHRIS KUFT, JR., 1613 58th Court, Cicero, Ill.

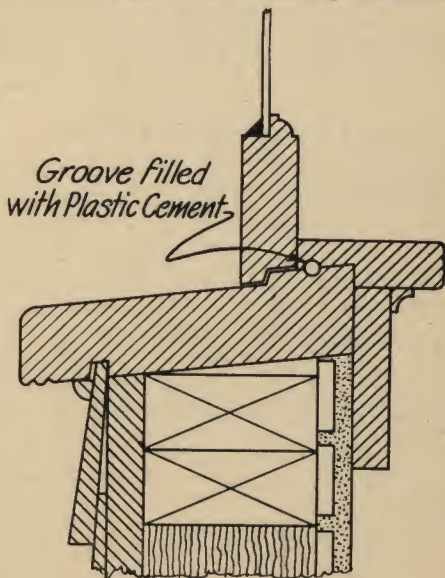
Framing Windows Without Leaks

AFTER reading the contributions in the December and February issue on stopping window leaks, I have decided to send in a sketch of a window frame and sash which, if used, will entirely eliminate leaks in double hung windows.

The sketch also shows my method of stopping leaks where it is necessary, but if the type of window shown is used in the first place it will never be necessary.

As can be clearly seen from the sketch, the sill is made with a shoulder and the lower edge of the sash with another shoulder which fits down over it. This forms an absolute protection against leakage.

For windows not made this way, which develop leaks, a $\frac{3}{8}$ inch groove may be cut, half in the sill and half in the stool, and filled with plastic cement. This will stop the leakage.

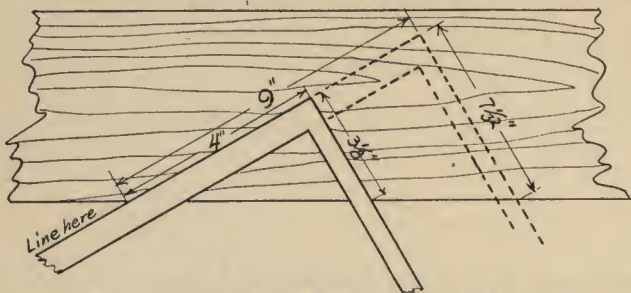


Shoulders, the Sill and Sash, Prevent Leakage Right from the Start.

CURT RICHARDSON, 1710 Madison Ave., Anderson, Ind.

To Multiply Fractions

HERE is a method of multiplying fractions by means of a steel square which is very practical and convenient.

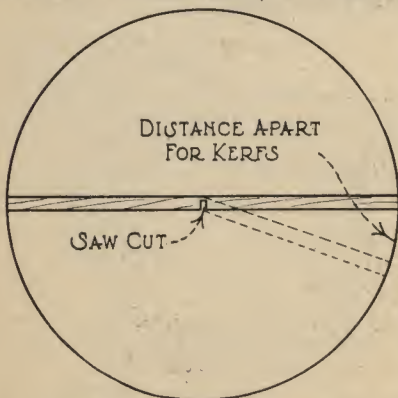


How to Multiply Those Bothersome Small Fractions.

Say you wish to multiply $3\frac{1}{8}$ by $2\frac{1}{4}$. Lay the square on a straight edge with the tongue at $3\frac{1}{8}$ and the blade at any number which is easily multiplied by $2\frac{1}{4}$, say four, as shown in the sketch. Now, after making a line along the blade, move the square along this line to the figure nine, which is $2\frac{1}{4}$ times four. The number on the tongue will be found to be $7\frac{1}{32}$ which is $2\frac{1}{4}$ times $3\frac{1}{8}$.—CHAS. P. KIME.

Correct Spacing of Kerfs

HERE is a sure and convenient way of finding the distance between kerfs, in order to bend a board to fit any circle. First make a kerf in one side of the board to a depth to bend easily. Make this kerf a distance from the end of the board exactly equal to the radius of the circle to which the board is to be bent.



The Distance the End Moves Gives the Spacing.

With the board on its edge, on a smooth surface, not bent, mark the point on the surface where the end of the board is. Now, without moving the rest of the board, bend the end till the kerf is

filled and again mark the point where the end of the board rests on the surface. The distance between the two points marked, that is the distance that the end of the board moves when bent to fill the kerf, is the distance for correct spacing between kerfs.—N. P. POWER, Lawrence, Kan.

Handy Measurement Table

It often happens that it is necessary for the carpenter to work from engineer's figures, which are in feet and hundredths of a foot. The average carpenter does not care for mathematics and hasn't time to do the figuring to change the fraction into inches, therefore, the accompanying table ought to be of use to these carpenters.

The table makes it possible to read off the hundredths of feet in inches instantly. To use it, find the fraction given in the table, then read the number of inches at the top of

	1 in.	2	3	4	5	6	7	8	9	10	11	12
	.08	.17	.25	.33	.42	.50	.58	.67	.75	.83	.92	1.00
$\frac{1}{8}$ in.	.01	.09	.18	.26	.34	.43	.51	.59	.68	.76	.84	.93
$\frac{1}{4}$	.02	.10	.19	.27	.35	.44	.52	.60	.69	.77	.85	.94
$\frac{3}{8}$	.03	.11	.20	.28	.36	.45	.53	.61	.70	.78	.86	.95
$\frac{1}{2}$	.04	.12	.21	.29	.38	.46	.54	.63	.71	.79	.88	.96
$\frac{5}{8}$	.05	.14	.22	.30	.39	.47	.55	.64	.72	.80	.89	.97
$\frac{3}{4}$	.06	.15	.23	.31	.40	.48	.56	.65	.73	.81	.90	.98
$\frac{7}{8}$	.07	.16	.24	.32	.41	.49	.57	.66	.74	.82	.91	.99

With This Chart It Is Possible to Read Off Hundredths
of a Foot in Inches.

the column and the fraction on the same line at the left. For example, to change .55 feet to inches, find .55 in the table. Directly above at the top of the column you will find six inches. On the same line at the left you find $\frac{5}{8}$ inches. Adding the two, .55 feet equal $6\frac{5}{8}$ inches.

This table is not absolutely accurate, but is close enough for any carpenter work, and is quite simple and handy.

J. FAHNENS, Box 365, Suisun, Cal.

To Hold Parts for Grinding

IN grinding small metal parts, it is often necessary for the workman to get his fingers too close to the wheel for safety. Besides this, the heat generated in grinding rapidly heats up such small parts till they become too hot to be held without frequently dipping them in water. The difficulty is easily overcome, however.

Clamp the small parts to be ground in a wood handscrew such as cabinet makers use. With the part held in the handscrew the grinding can go ahead at a much faster rate, without discomfort and without danger. If a wooden handscrew is not available, a carriage clamp, with two thin pieces of wood between it and the piece to be handled, will serve the same purpose.

JOHN E. HYLER, 501 Broadway Ave., Peoria, Ill.

Repairing Sunken Floor Boards

FREQUENTLY a sunken place will appear in an otherwise sound floor. This may be confined to a single board, a defect or poor workmanship in the sub-floor beneath which has allowed one edge to drop. It is not necessary to rip the whole floor or make a big job of repairing this.

Drive wood screws into the sunken piece as near the bad edge as possible, screwing these in only far enough to have a good hold. Take a wrecking bar and, using a small piece of wood, placed back on the sound part of the floor, as a fulcrum, hook the bar under the screw head and lift the board edge into place.



A Sunken Floor Board Can Be Lifted and Secured in Place by This Method Without Making a Big Job of the Repair.

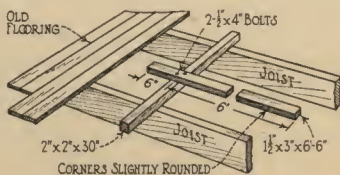
While the board is held in this position, holes may be drilled and 8-penny nails driven in at an angle along the sunken edge so that they hold the board up in its proper position regardless of the defects below. Both nail and screw holes can, afterward, be puttied and stained to match the floor color.

MORRIS A. HALL, White Plains, N. Y.

For Removing Flooring

INCLOSED is a sketch of a very handy tool for removing old flooring, especially so when the old floor is to be used again for sub floor; it can be removed with very little breakage.

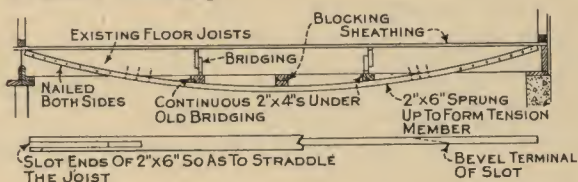
C. M. HUDSON, Eatonton, Georgia.



Wooden Pry Bar for Floor Work.

Stiffening Springy Floors

IN modernizing work floors are often encountered that are subject to excessive vibration. This is usually because of not sufficient depth in the joists to provide the required stiffness. Sometimes it is not convenient nor desirable to plank on another joist, then the herewith indicated underslung method can be used to advantage.



A 2 x 6 Sprung into Place Stiffens Floor.

Continuous 2 x 4s are nailed to the under side of the joists, preferably under the bridging. A 2 x 6 of good length is slotted so that the ends may pass up on either side of the joist. The 2 x 6 is then sprung up as indicated so that it bears on the two 2 x 4s and forms a catenary curve under the joist. The ends are well nailed. The center, or in long spans, at a couple points, is blocked down so as to prevent the tendency of the 2 x 6 to straighten out under load. The very act of springing the 2 x 6 into place helps put the crown back into the old joists. One of these on every third joist should take the spring out of a floor, at least to a point equal to joists 4" greater in depth to those originally used.

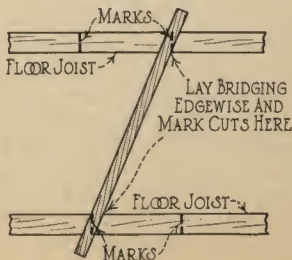
E. O. BROSTROM, Architect, 600 Reliance Bldg., Kansas City.

To Cut Floor Bridging

A GOOD way to find the right cut for floor bridging is to lay a piece of a floor joist timber from floor joist to floor joist and mark as shown. Now lay a piece of bridging across as shown and mark. You will then have the right cut for your bridging.

H. E. JENKINS, Sutherland, Neb.

H. E. Jenkins Describes
This Method of Figuring
Cut for Floor Bridging.



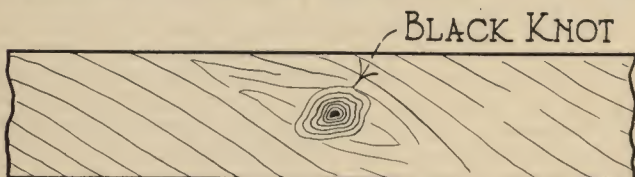
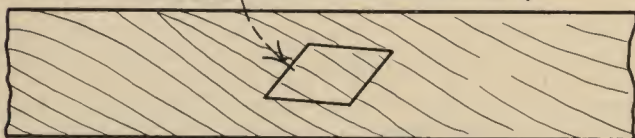
To Patch a Bad Knot Hole

IN order to do a good job of patching black knots in furniture or any wood work, cut out the defect in any suitable shape and size, but preferably a diamond shape as glue holds better in the sharp angles. Select a piece of the same wood, with grain as nearly like the piece to be patched as possible. Chalk the edges of the hole, lay the other piece on it with the grain parallel, and strike with a hammer.

Saw carefully to the lines obtained in this way on the patching piece, bearing in mind that the line is the outside of the hole. The patching piece will then fit perfectly and, because of its shape, can be glued firmly in place.

FRED VANDER WERFF, Box 217, Lansing, Ill.

ANY SUITABLE SHAPE OF PLUG (A)



A Patch of This Shape Can Be Glued Securely
and Matches the Grain.

For Patching Wallboard

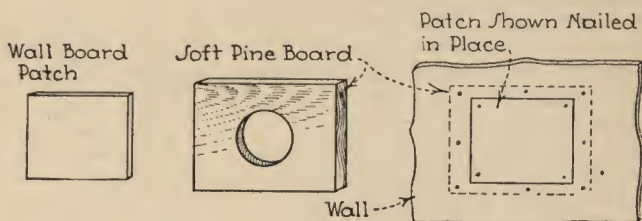
HERE is a method I use for patching holes in various fiber and gypsum wallboards which I feel might be worth passing along to others. I first take a piece of the wallboard and cut it to a size somewhat larger than the hole to be patched, say five by eight inches. I put this patch against the wall, over the hole, and mark around it. I then cut out the hole so that the patch just fits it.

I then take a piece of lumber, soft pine preferred, and cut it a little larger than the patch. In the case of a patch measuring five by eight inches, as suggested above, I would make this board six by nine inches. This permits it to pass through the hole but to cover it completely from behind. I make a hole about $1\frac{1}{2}$ inches in diameter in the center of this board so that I can hold it after passing it through the hole in the wall, while nailing it in place. I then put the patch into the

hole and nail it to the board. It can then be papered or painted so that it will not be noticeable and will make a very neat repair job.

There are many cases where it is necessary to vary the size of the patch but, by making the hole large enough to get a fair sized piece of board back of it, you will have no trouble. Sometimes, however, it is necessary to nail strips on the back of the board to prevent it from slipping.

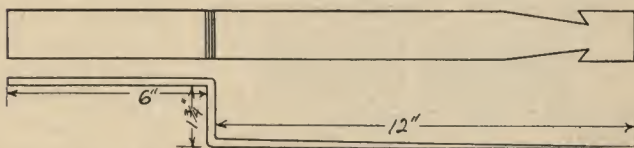
C. W. SKEEN, Eskridge, Kan.



The Piece of Soft Pine Is Passed Through the Hole and Nailed to the Back of the Wall and the Patch Nailed to It.

A Tool for Removing Shingles

I SUPPOSE that every carpenter has, at some time, taken home skinned knuckles and a bad humor after doing the most aggravating job that falls to his lot, that is, tearing out and replacing old shingled valleys or patching shingled roofs in general. It was one of these jobs that caused me to design



An Old Buggy Spring Worked into This Shape Is Useful in Removing Shingles and Saves Damage to One's Knuckles.

the tool shown in the sketch. It has proven its worth for 15 or 20 years and perhaps some others would be glad to hear of it.

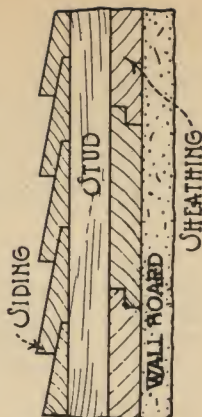
This tool was made of a thin leaf from a buggy spring. The thin end was ground sharp and the sides were notched as shown. It was then offset about $1\frac{3}{4}$ inches to keep the knuckles clear in working. It makes a convenient tool for ripping off shingles, cutting off nails. By driving it against them or by engaging with the side notches and striking the offset with a hammer the most unyielding may be cut off or torn out.

L. M. HODGE, 4039 Edenhurst Ave., Los Angeles, Cal.

To Stiffen Wallboard

ON inexpensive jobs where plaster board or fiber board is used on the walls and not plastered, the board needs stiffening to keep it from bulging. At the same time, because of the necessity of keeping down costs you can not add any stiffening material. I take care of such a situation by putting the wood sheathing on the inside of the studs instead of outside. This makes the job as a whole just as strong and also stiffens the wall board.

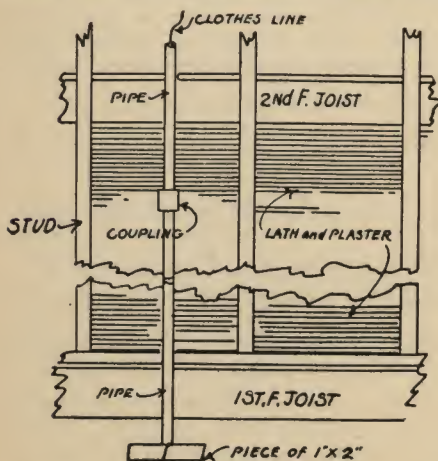
W. KRAATZ, 85 Holland Ave.,
White Plains, N. Y.



On Inexpensive Jobs
Place the Sheathing
Inside to Stiffen the
Wallboard.

Placing Pipe in Plastered Walls

I AM sending in a sketch showing how to put a pipe into a partition that is already plastered. By running a tape down from the upper floor to the basement you can get



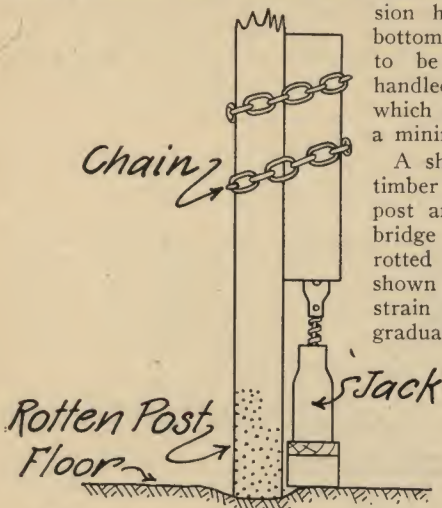
Piping Can Be Placed in Walls Without
Tearing Out Plastering by Using
This Scheme.

HENRY FANE, 2347 Carolina St., Chicago.

the proper depth of pipe which should be in two pieces, with one coupling. Take a clothesline and run it from the upper floor to the basement and through both pieces of pipe separately. By pulling the clothesline at the upper floor the two pieces of pipe will follow and can be held in line so as to be readily coupled together.

Repairing a Rotted Post

IN an old cannery underground renovation, a 12x12-inch post, supporting the center of a wide span, was found to have crushed through the wood flooring, having been set directly thereon, and accumulated rain seepage in the depression had rotted it at the bottom. This, of course, had to be repaired. It was handled in a simple way which reduced the labor to a minimum.



A Jack and a Piece of Chain Took the Weight of the Post During Repairs.

A short length of heavy timber was chained to the post and a jack, set on a bridge base to clear the rotted flooring, applied as shown in the sketch. The strain was taken up very gradually. The shaded portion of the post, which included all of the rotten wood, was then cut away, the rotted flooring renewed and a new foot fitted to the post, secured with bolts through the

halved joint. A base piece was also put in under the new foot to distribute the imposed weight over a greater area of floor. The bolts were finally tightened up after removing the jack.

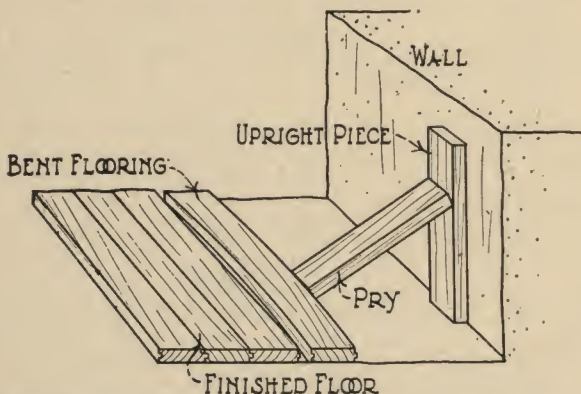
FRED PHEASY, 1625 Hollywood Crescent, Victoria, B. C., Canada.

To Sharpen Hollow Chisels

THE hollow chisels of mortising machines are difficult to sharpen by ordinary methods. Here is a method, however, which has been found very satisfactory by a large planing mill in this city. The bit is removed and the chisel is reamed out with a rose head countersink until sharp and then finished on an oil stone. A good job can be completed quickly this way.—E. E. YOUNGKIN, 602 E. Grant Ave., Altoona, Pa.

To Lay Warped Flooring

IN laying flooring, pieces that are badly bent can be used satisfactorily by the following method: Take two short pieces of waste material. Place one of them against the wall, as shown in the sketch. The other piece should be about two inches longer than the distance from the bent piece of flooring to be laid to the wall. Place this piece with one end against the bent flooring and the other against the upright piece as a pry, and drive the bent flooring into place, ham-



A Few Taps on the Pry Will Force the Bent Flooring into Place for Nailing and Save Much Material.

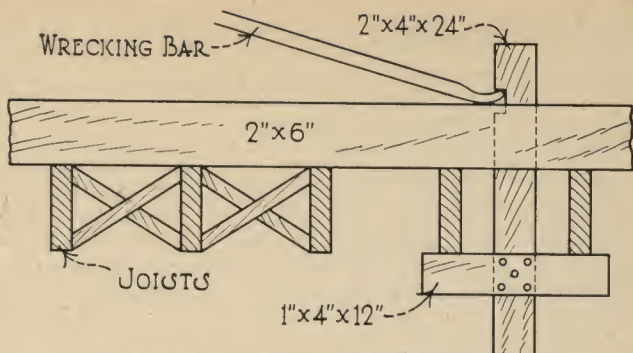
mering the pry, and nail. For laying the next strip of flooring the pry piece can be cut off a couple of inches and used again.

WERNER KRAATZ, 85 Holland Ave., White Plains, N. Y.

Leveling Joists for Bridging

IT is necessary, sometimes, to force floor joists up to a common level when applying bridging. The simple device shown in the sketch is very effective for this and is quickly made. I first lay a piece of straight two by six, on edge, across the span of joists, parallel with the row of bridging that is to be applied and about a foot from the center of the span.

Next take a piece of two by four about two feet long and nail to it a piece of one by four, as shown in the sketch. Saw out a notch near the opposite end of the two by four. Place this clamp with the cross piece under the joist and with the notch barely protruding above the two by six. With a wreck-

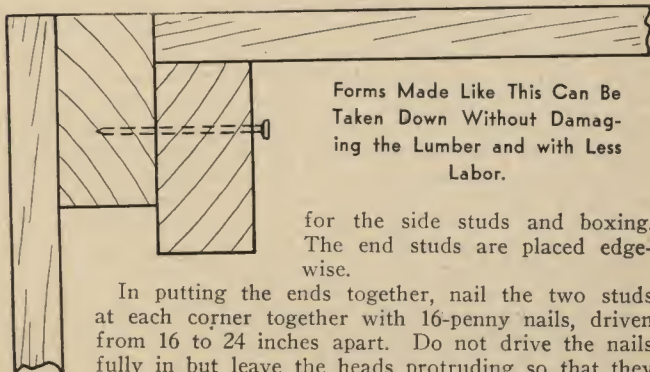


Here Is an Easy Way to Jack Joists Up Level.

ing bar hooked into the notch, and the two by six as a fulcrum, it is an easy matter to force the most stubborn joists to their proper level and hold them till firmly spiked to the two by six. The two by six then holds them until bridged.—PAUL F. ENGEL, Route 1, Hanceville, Ala.

Better Form Construction

HERE is a sketch and description of an inside corner for concrete forms as I build them. By this method I make the sides full length and the end studs flush with the end and flat. The ends are enough shorter than the width to allow



Forms Made Like This Can Be Taken Down Without Damaging the Lumber and with Less Labor.

for the side studs and boxing. The end studs are placed edge-wise.

In putting the ends together, nail the two studs at each corner together with 16-penny nails, driven from 16 to 24 inches apart. Do not drive the nails fully in but leave the heads protruding so that they can be drawn with a hammer or clawbar when you come to take the form down.

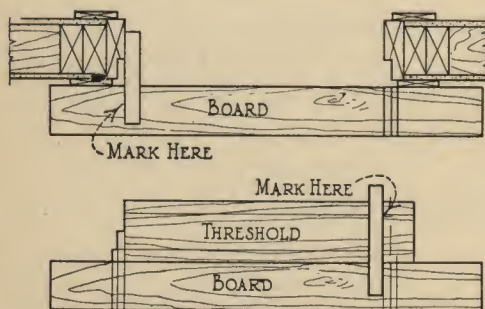
After the nails have been drawn, the studs can be pried off quite easily and the form taken down without breaking up the lumber. The single two by four usually used for inside corners has to be torn out, sometimes reducing it to kindling wood and there is considerable loss of material and time as well.

C. E. MYLES, Box 368, Harrison, Ark.

To Fit a Threshold

HERE is a method of cutting in a threshold that assures a perfect fit and makes a simple matter of a job that many carpenters find troublesome.

Take a piece of board about a foot longer than the door is wide and lay it down on the floor in front of the doorway, pressing it against the casings, or the plinth blocks as the case may be. Now take your rule or a straightedge and lay one end of it flat on the board and press the other end against the face of the door jamb. Mark clear across the board with a sharp pencil. Then place your straightedge against the rabbet and the casing in turn, marking across the board as before. Then mark the other end, being careful not to let the board move.



How MacKeen
Gets Threshold
Marks in Right
Place.

Now pick up the board and look at your marks; the chances are ten to one that instead of being parallel to each other they will diverge slightly, which means that they would be practically useless had you put them on a threshold in this manner. That is why you use the board. Now you take your threshold, lay it on the floor in front of your board, take your straight-edge and placing it carefully on the lines you have made, transfer them to the threshold. *This brings your measurements back to their exact original position.* In marking on the bevel of the threshold it is well to use a jackknife as it is more accurate than a pencil. Now all you have to do is measure the depth of the rabbet from the edge of the frame and make a corresponding mark on the threshold, measuring from the bevel.

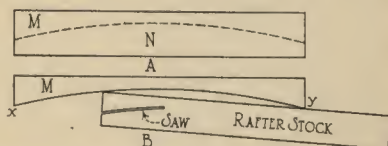
Saw carefully to the marks, cutting under slightly, then split the pieces off with a chisel and your threshold is ready to put in place.—EVERETT MACKEEN, Wakefield, Mass.

Fast Way to Cut Curved Pieces

AVERY convenient and trouble saving method of sawing a large number of pieces, curved on one side, such as are used for the main rafters of curved rafter barns, is illustrated in the accompanying figure.

A piece of lumber two or three inches wider than the greatest width of the desired member, and of the same length, is marked with the desired arc and sawed as shown by the dotted line in view A. Piece N represents the desired size and shape of the curved edge member. The waste piece M is fastened to the saw table as a guide, as shown at B, with the middle of its length even with the saw blade and so that corners x and y are on a line with the saw blade. The rafter stock is then pushed through, as shown at B, always keeping a corner and an edge against the guide piece M. The pieces can be sawed as fast as the saw will take them and without the trouble of marking each one, and then trying to follow the mark.

Method Proposed for Rapid Cutting of Curved Rafters.



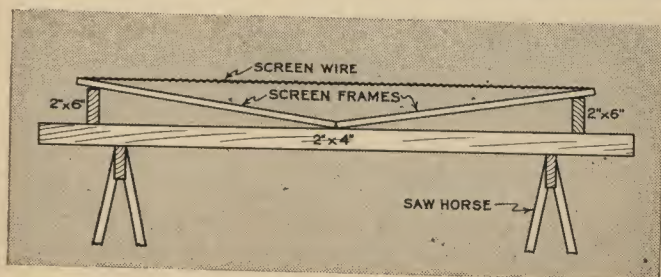
If, in order to save material, it is desired to saw a curve on about one-third of each end of the rafter stock and to leave the middle flat, the piece M should have a shallow notch, large enough to receive the saw blade, cut at the center of its curved edge and the piece M moved towards the saw until the blade lies within the notch and out of the way. A sawed piece like N is then fitted with gauge blocks and used as a rider, the uncut rafter stock being laid on top of it and pushed through, with the curved edge of rider in contact with the guide M.

MARION A. EMMONS, What Cheer, Ia.

Getting Tight Screen

USE this method to stretch screen wire: put frames end to end, raise up 4" to 6", tack wire and stretch to other end of opposite frame. Tack and put on moulding on ends. Take out 2 x 4 or 2 x 6 and let frame lie flat. Wire will be tight, but if not tight enough, put block in center, raise up and nail inside ends and cut off wire.

G. R. OTTER, Dupo, Ill.

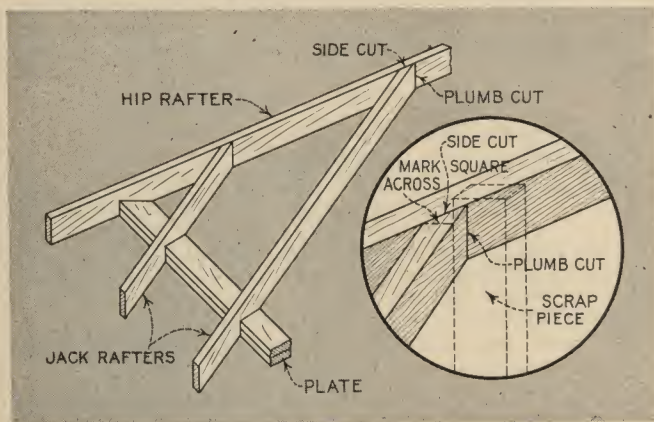


Two Frames Are Nailed at Same Time, and Screening Is Stretched Tight by Elevating Ends in This Fashion.

To Lay Out Jack Rafters

I SEE you offer \$2.00 for ideas: Here is one on how to lay out the side cut on jack rafters, regardless of pitch. The idea works the same—all you need is the plumb cut and a scrap piece of the same thickness of material, and you have it. This is a time saver and you do not need to fill your head full of figures.

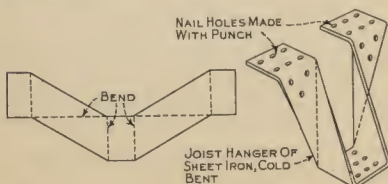
R. J. STARKEY, Stubbs, Cal.



By This Method Jack Rafters Are Quickly Laid Out

Stirrup for Joist Support

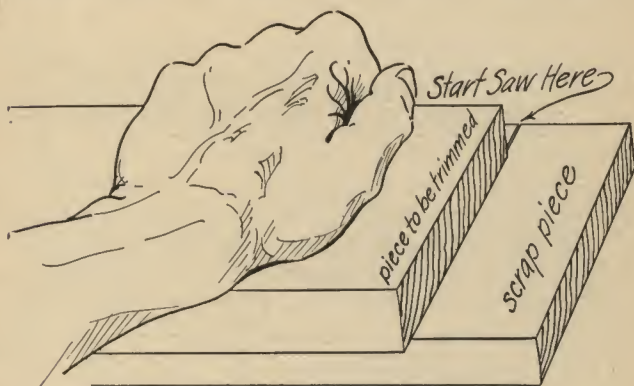
AN idea for use in remodeling a house is that of using sheet iron for stirrups, made as shown in the accompanying illustration. Strips of sheet iron are quickly cold bent to the shape shown, and, with a nail punch, all holes are made for nailing. While this stirrup does not differ much from the usual iron hanger, it is simpler. The main strength difference rests in the increased bearing at the edge of the header and the bottom of the beam, and the iron does not break into wood nearly like the iron hanger of smaller width. As many nails can be inserted as desired, as other holes are made quickly with a punch.—B. S. LUERS, 2355 Ashmead Pl., N. W., Washington, D. C.



How Homemade Sheet-iron Hangers Are Designed.

Trimming Board Ends

A METHOD of trimming the end of a piece of lumber that is only a trifle too long, which is quicked and simpler than the one shown in the January issue, is illustrated by the sketch. Just lay a piece of waste lumber under the piece to be trimmed, holding the edges with one hand. The piece of



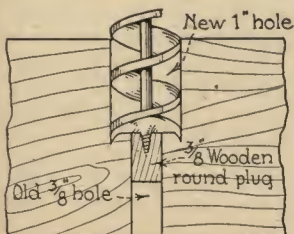
A Simple and Accurate Way of Trimming a Small Excess Off the End of a Board Without Stopping to Clamp or Nail.

waste lumber guides the saw just as accurately as in the other method and there is no time wasted clamping or nailing.

C. J. ROYCE, Fremont, Ohio.

To Center the Bit

THE sketch shows a little idea I have found helpful in boring holes. I had to bore a one-inch hole over a $\frac{3}{8}$ -inch hole, recently. In other words, I had to make a one-inch



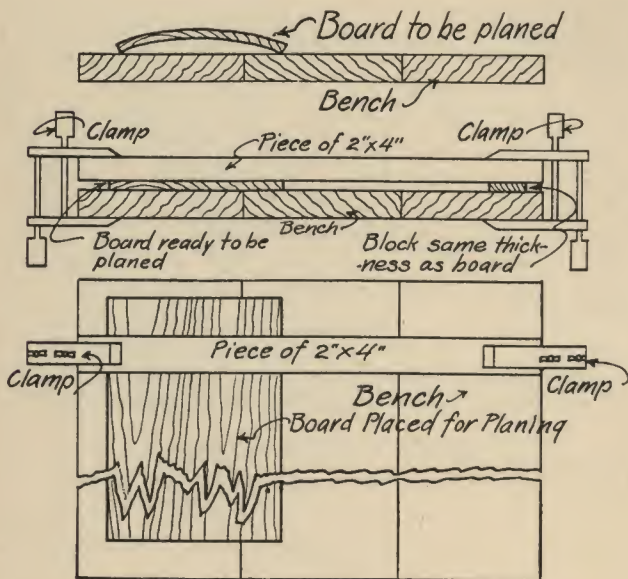
Start the Bit in the Center of a Plug Which Just Fits the Old Hole.

hole out of a $\frac{3}{8}$ -inch hole. As the bit would not center correctly, this was impossible to do accurately till I hit upon the idea of making a small plug, $\frac{3}{8}$ of an inch in diameter, which I centered onto the screw part of the one-inch bit. With the plug inserted into the $\frac{3}{8}$ -inch hole the bit was perfectly centered over the hole.

RAY ARVIDSON,
1650 Church St.,
Detroit, Mich.

To Plane Warped Boards

It is a very difficult matter to plane and sand warped boards which have a width of around 10 inches. Material to be used for shelving and similar purposes should be planed and sanded in order to take off the dirt, dust and machine marks, but often this is not done because of the fact that the material



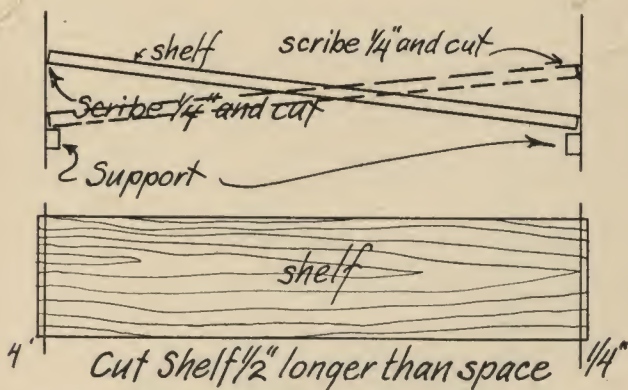
A Warped Board Can Be Clamped to the Bench in This Manner for Planing with Good Results.

is warped and it cannot be planed evenly. Here is a method which makes it possible to plane such material, however. Place the warped board on a solid bench and place a good strong straight piece of two by four across one end or the middle, as near as possible to the part that is to be planed. Place a piece of material of the same thickness as the board to be planed under the end of the two by four as shown in the sketch. Then clamp the two by four to the bench at each end. This will press the board down flat so that it can be planed evenly and be used instead of going to waste.

OWEN STACEY, Box 45, care Carpenter Shop,
Mount Hermon, Mass.

To Fit Shelves Neatly

THE sketch shows my way of fitting shelving in closets and other places where a neat fit is wanted. I cut the shelving $\frac{1}{2}$ inch longer than the width of the opening, which allows $\frac{1}{4}$ inch for scribing on each side. The scribing is



By Cutting Shelves a Half Inch Too Long and Scribing as Shown Here a Neat Fit Can Be Obtained.

done with a regular pocket scriber or compass. I scribe one end at a time.

I put the shelf in place, raising one end so that the other end drops down into place on the support and scribe the latter end. I then take the shelf out and cut this end as marked. Next I again put the shelf in place, with the other end down on the support and scribe it, then remove and cut it. This gives a perfect fit if you remember to keep the shelving in line with the back wall and get an accurate measurement at the longest point where the shelving is placed.

When I want to fit the back also I scribe it in the same way. If this is to be done the shelving should be a little wider than the depth of the space into which it is to fit.

I have had a number of carpenters ask me how to fit such shelving accurately so thought it would be worth while to pass my method along.

ROY MATHA, 122 Oak St., Warren, Pa.

A Help in Planing Thin Wood

PLANING thin wood is quite difficult to do without injuring it. When the ordinary bench stops are unsatisfactory for the purpose, a false bench stop with a cleat at each end on opposite sides, and sandpaper glued to one side as clearly shown in my sketch, will be found to be convenient.

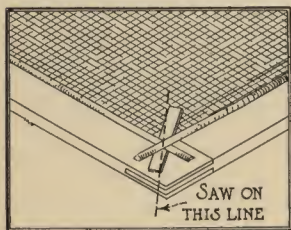
The sandpaper holds thin work that is not as wide as the cleats. The cleats of course should be a trifle narrower than can be drilled to receive match sticks, which serve as stops.

I hope this idea of planing thin wood will be found to be very useful and handy to many readers, as many of their ideas are of great value to me.—MIKE S. STAHL, JR., Raley, Alta., Can.



Short Cut in Making Screens

| SAVE considerable time when cutting the moulding for screens by tacking on the moulding to within about six inches of the corners. When this is finished I place a very thin board under the corner and saw at an angle of about 45 degrees. This gives a perfect joint every time and does away with the necessity of measuring and cutting with a miter board. The board is removed after sawing and the corners tacked tight.

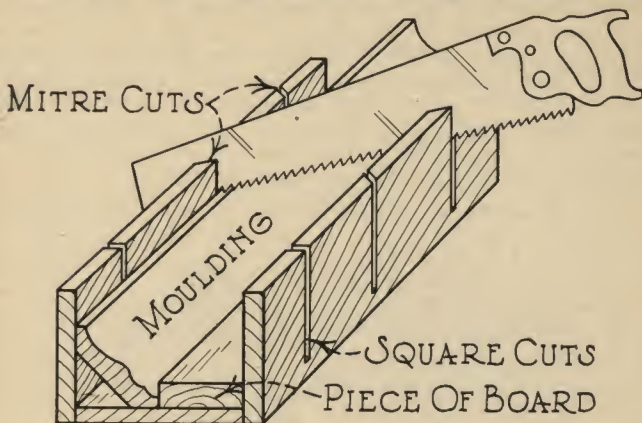


Above — Method Used by
W. A. Whitfield to Make
Mouldings Fit.

W. A. WHITFIELD, 3025 Dudley,
Lincoln, Neb.

Use a Wide Mitre Box

IN the January issue, Joseph J. Zar recommended a narrow mitre box for cutting spring moulding. I have found,



A Piece of Board Placed in the Wide Mitre Box Holds the Moulding for Cutting.

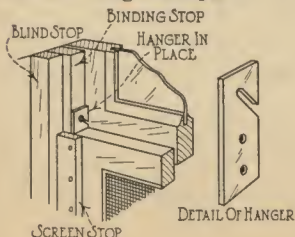
however, that a wide mitre box works more accurately than a narrow one and, besides, will last longer.

When cutting spring moulding in a wide mitre box, I usually fill the extra space on the bottom of the box with a loose piece of board, wide enough to hold the moulding tight. This holds the moulding as well as a narrow box would. Besides having the other advantages mentioned and can also be used for other work.—WERNER KRAATZ, 28 Lake St., White Plains, N. Y.

Better Way to Hang Window Screens

THE disadvantage of the usual method of holding screens is that the small strips of moulding tacked to the blind stop over which the grooved edges of the screen are slid, warp and often break off necessitating replacement.

Remove this moulding entirely and attach a strap iron hanger in which a diagonal slot is cut, as clearly shown in sketch. Two holes are drilled through the lower end of each hanger for screwing it in place. The accompanying sketch shows this plainly.



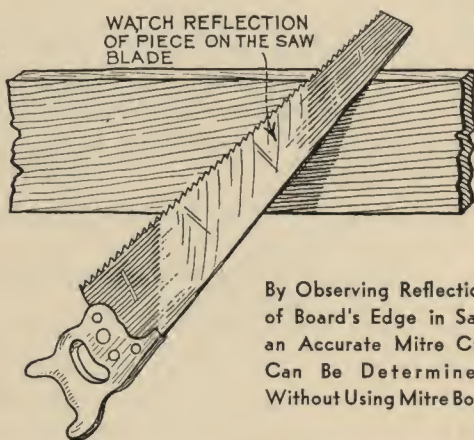
MIKE M. STAHL, Raley, Alta.

Hanging of Window Screens
Is Simplified by Use of Hook
in This Fashion.

Mitre Cuts Without Box

I AM SHOWING a sketch below that tells how I make mitre cuts without a mitre box. These cuts will be pretty close to correct even without the box. Set your hand saw on the material to be cut, as nearly plumb as possible. Now watch reflection of piece of wood in the saw blade. Pivot the saw blade right or left until the reflection of the edge of the board makes a right angle with the real edge. Then mark along back of saw and you have your mitre cut. A little practice will show you how and skill in judging cut will grow with experience.

C. E. LINDSTROM, Home Service Co., Minneapolis, Minn.

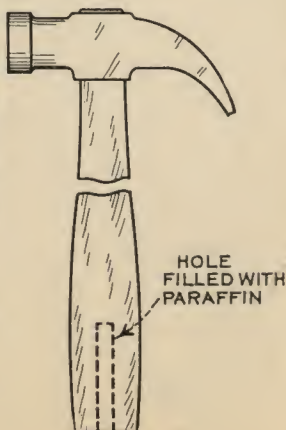


For Driving Nails in Hardwood

THE end of the hammer handle is bored and filled with paraffin. When nails bend and refuse to enter hardwoods, they are pushed into the paraffin, which lubricates them, making them go into the wood without difficulty. This method has been used by local carpenters and builders for many years.

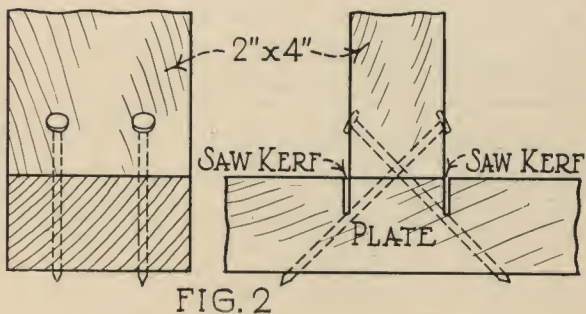
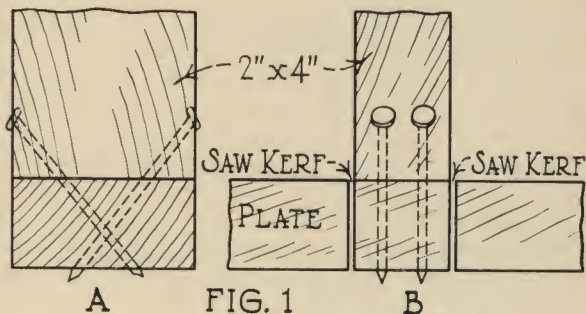
EMERSON EASTERLING,
Ashland, Ore.

Makes Nail Go in
Easily.



Nailing That Saves Saws

IN order to avoid hitting a nail with the saw when cutting out plates for door or other openings, the toe-nailing should be done from the edge, instead of from the side as is usual. There are so many times when it becomes necessary to cut out a plate between studs that, if the nailing is from



Toe-Nailing as in Figure 1, Saves Damage to Saws
When Cutting the Plate.

the sides, a good saw is sure to be damaged sooner or later.

A side view of the toe-nailing from the edge is shown in figure 1 at A, and an edge view at B. The saw kerf on each side of the studs, through the plate is shown illustrating how there is no danger to the saw with this method.

The common, side-nailing method is shown in figure 2, both side and edge views. In the edge view the saw kerf through the plate is shown to illustrate the point that it is not possible to saw through the plate without striking the nails, with this method of nailing. Striking the nail means refiling the saw and wasting a lot of time.

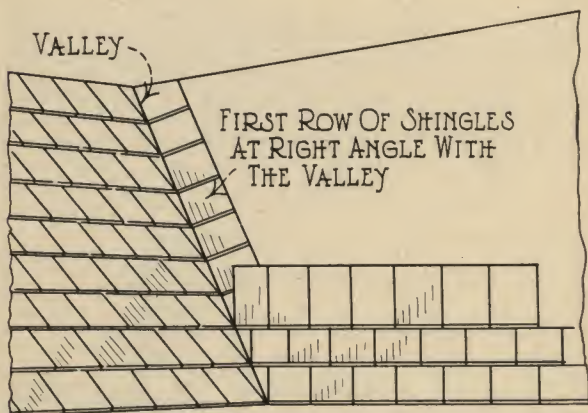
H. H. SIEGLE, Emporia, Kan.

Shingling a Valley

THE sketch shows my method of shingling a valley without sawing more than three shingles. I first lay a row of shingles at right angles with the valley, all the way up. I always pick out the wide shingles for this as they make fewer joints.

Next take the first shingle of the regular double row and saw it to fit against the first shingle to the valley. Then lay the double row clear across the roof, letting the corner of each row following extend out to the valley.

M. K. McREA, McCool Junction, Neb.

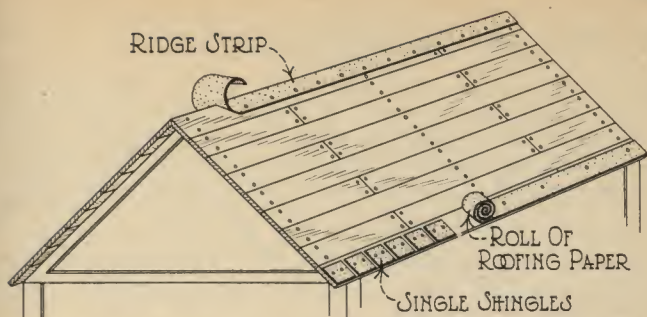


You Can Save Cutting Shingles by Using This Method of Shingling the Valley.

When Laying Asphalt Shingles

INSTEAD of laying the first row of asphalt shingles along the edge of the roof, in the usual way, I lay a strip of similar roll roofing first, as shown in the sketch. This gets the roofing started more quickly and with less nailing as the roll requires a few nails only. The second layer of regular shingles is sufficiently nailed to hold the roll material in place. Since the usual first layer of shingles is entirely covered by the second layer, there is no apparent difference in the roof. The roll roofing is cut to the width of the shingles being used.

In finishing the ridge I again use a piece of roll roofing as shown in the sketch. This is not only quicker than laying single shingles, but it reduces the chance of a strong wind getting underneath and raising the roofing. With single



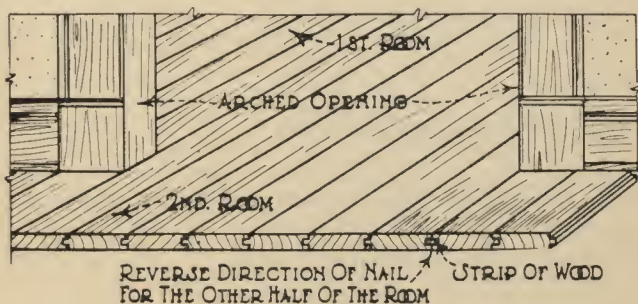
Roll Roofing Used at Eaves and Ridge with Asphalt Shingles
Saves Time and Makes a Better Job.
Sketch Shows Comparison.

shingles, sometimes some of the nails fail to catch in solid wood with the result that these shingles may raise and cause leaks.

JOSEPH J. ZAR, Oliphant, Pa.

When Laying Flooring

IN order to get a straight line, when laying flooring through an arched opening, I start in one room and when I come to the opening lay right through it into the second room, and continue laying from the opening on in the second room just as in the first. To finish the second room it is necessary to reverse the direction of nailing for the other half of the room. To do this I use a strip of wood inserted into the grooves of the two pieces of flooring where the pieces are



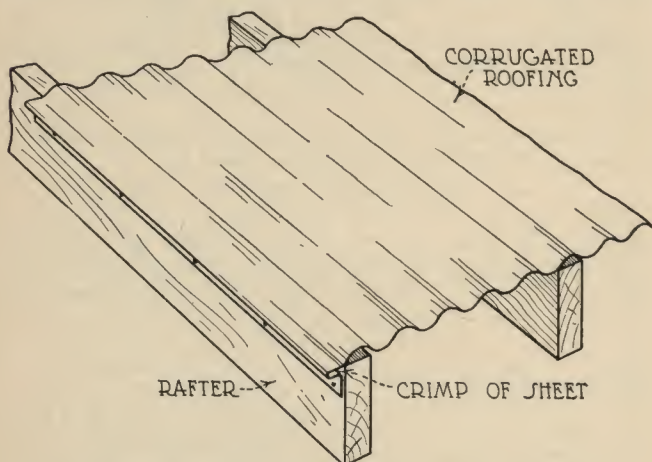
Lay the Flooring Right Through the Opening, Then Use a Strip Fitted into the Two Grooves to Reverse the Direction of Nailing.

joined with the grooved sides together. This takes the place of the tongue and from there on the laying is just as usual.

WERNER KRAATZ, 85 Holland Ave., White Plains, N. Y.

Roofing with Sheet Metal

THE sketch shows the way I put on the end sheets of corrugated metal roofing. It makes a neat smooth finish if the metal is properly bent and keeps the wind from getting underneath the roofing and blowing it off. I measure back about two or $2\frac{1}{2}$ corrugations from the edge of the sheet,



Bend the Metal Roofing in This Manner and Nail It to the Rafter to Keep Out the Wind.

bend the sheet down and, using a straightedge, bend about one inch out at right angles. This one-inch strip I nail to the side of the rafter as shown.

E. S. BRITTON, P. O. Box 133, Steele, Mo.

To Cut Corrugated Iron

IT is easy to cut across a sheet of corrugated iron with a pair of snips, but almost impossible to rip a sheet lengthwise with the snips. The accompanying sketch shows how I do this job. This method makes it easy. I took an old saw and drilled a $\frac{3}{8}$ -inch hole through it about six inches from the end and put a bolt through this hole.

To cut the corrugated iron I place a couple of two by fours across a pair of saw horses, place the saw between and fasten them about $\frac{1}{8}$ of an inch apart. I place the sheet on the two by fours with the line along which I wish to cut directly over the slot between them and cut by pressing the back of the saw through the sheet.

The bolt, against the lower side of the two by fours, acts as a stop to give leverage. If the saw is kept greased it cuts



The Bolt Through the Saw Gives a Leverage Against the Two by Fours and Makes Cutting Easy

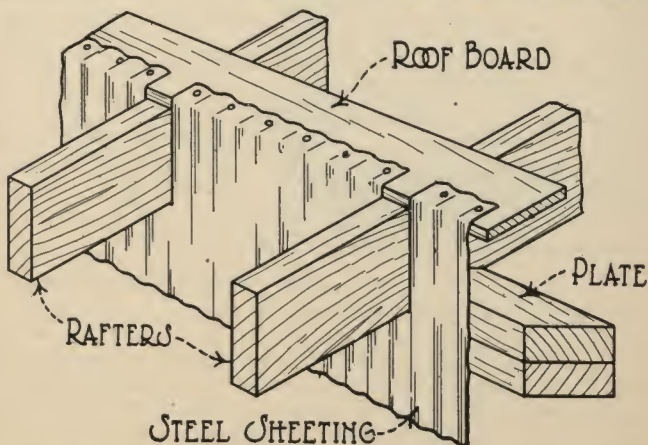
easily and quickly by taking small bites and keeping the bolt up to the under side of the bench.

J. SUTHERLAND, 276 Balbach St., San Jose, Calif.

Applying Sheet Steel

THE method I use in applying steel sheeting to the walls of buildings makes a perfectly tight job under the eaves and between the rafters. It is shown in the sketch. I get the steel long enough to extend above the rafters several inches. I cut out notches in the steel for the rafters to fit into. Nail on one roof board that comes flush up against the steel then bend the steel over this board and nail in place. Place the roofing over this and the job is finished with no holes or leaks anywhere.

EDWARD W. STARZ, Zumbro Falls, Minn.

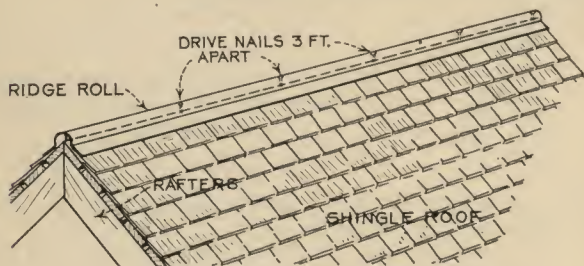


A Tight Job at the Eaves Is Obtained by Running the Sheet Metal Up in This Way.

To Get a Straight Ridge Roll

DRIVE a nail at each end of the building or roof and then stretch a mason's line at whatever height is required for the ridge roll you are using. Then for every three feet, drive nails directly under the line, and up to the line. By laying the galvanized iron ridge on the nails, you are able to get a perfectly lined ridge with a minimum of labor.

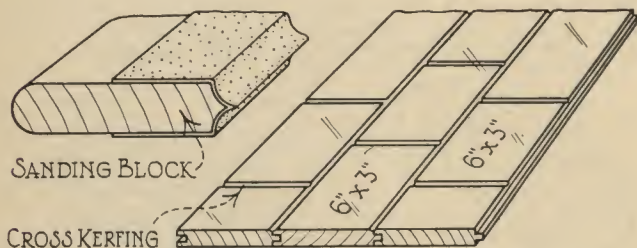
EUGENE M. SWENSON, Hazel Crest, Ill.



Nails Are Driven in to Provide Ridge Roll Guide

A Tile Reproduction

THE accompanying sketch shows how I recently reconditioned a bathroom wainscoting to represent tile. I used $\frac{3}{8}$ -inch white wood, 3 inches wide, run and matched on an ordinary matcher. It was then kerfed across the grain on an ordinary power saw and the edges of the kerfs were rounded with a sanding block made as shown in the sketch.



An Excellent Reproduction of Tile Wainscoting Made from Kerfed and Enameled Wood.

These strips were applied to the wall and finished with suitable cap, base and neck moulds. Two coats of flat white, and two coats of white enamel were applied and the result was an excellent reproduction of high class tile. This kind of a job, which is quite economical, can also be used to good effect in kitchens.

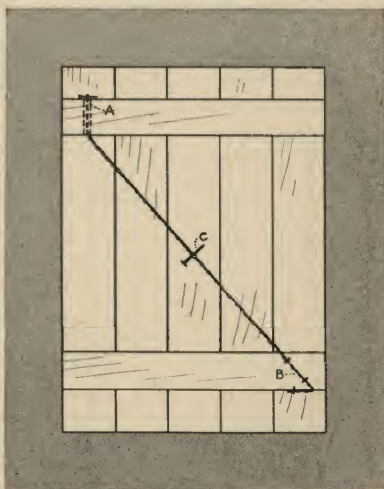
FRED W. WESLEY, Burks Falls, Ont., Canada.

To Brace Doors

HERE is a method for bracing doors which I have found very satisfactory. It is a good way to pull old doors back into shape and a simple method to build new ones. Many barn doors, hog house, chicken house and brooder house doors are built in this manner and need a brace of some kind.

I have shown two methods of bracing on one drawing. On small doors where the cleats are narrow, it is neater to drill a $\frac{1}{4}$ -inch hole about 2 inches from end of cleat as shown at A in drawing. Many times a hole is impossible; in that case saw a groove diagonally across the cleat about $\frac{1}{4}$ inch deep, as at B. Now you double a piece of No. 12 or 14 wire so that it is a few inches longer than diagonal distance across the door. Run the loop end of the wire up through the hole, slip a nail through the loop, pull wire down and you have that end fastened. Then the loose ends of the wire are pulled tight and hammered into the slot sawed in the bottom cleat. Two or three small staples will hold the wire in the slot and the loose ends are bent back parallel with the cleat and stapled. You now twist the wire at C with a nail until proper tension is obtained. The nail can then be removed.

The slot method can be used on the top cleat too if so desired, or the hole method can be used on both cleats if the holes are drilled before the door is hung. On doors with side nailers, the slot method is best, but where the holes can be drilled, it makes a neater looking job. DONOVAN MYERS, Avon, Ill.



For Straightening an Old Door or Bracing a New One Use This Method.

Cutting Iron with Saw

A GOOD way to cut corrugated iron: Place enough planks on a pair of tressels to support the sheet of iron well. Lay the iron on the planks so the line to be cut is directly over a crack between the planks. Then with a common eight-point saw, saw down through the iron and the crack between planks. Enough pressure should be placed on the saw so it will not slide over the iron, but will cut its way through. The sheet may be cut lengthwise, crosswise or diagonally, with very little effort, and without distorting the sheet.

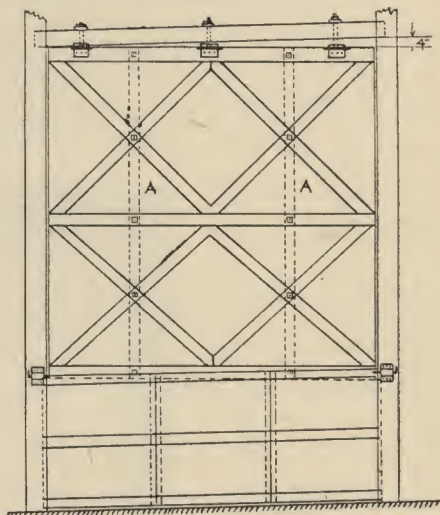
WILLIAM B. STAPP, Norton, Kan.

Fitting a Large Door to a Sagged Opening

THE foundation under a column in a warehouse had sunk and the big hanging door alongside it had been lowered four inches on one side so that it did not lap over one of the columns. A new door was to be put in and I had to fit it to these conditions. Here is how I did it.

This was a very large door with three loose doors underneath. Only the space directly in front of the door was available to work in so no scaffold or ladders could be used at the sides. Two ropes, running through two blocks in the ceiling were fastened on the upper side of the door and, together with the ropes for swinging the door open, provided means for lowering the door down onto the floor.

The three new horizontal pieces and the two new vertical pieces marked "A" in the sketch, were now cut, using the old ones as patterns. These five pieces were tacked together in the same position as the similar pieces on the old door. These were laid off square by the 3-4-5 method and checked by the diagonal method. The left side was then tacked to the floor and the distance X-4, in



INSIDE ELEVATION

This Opening Had Sagged, but a Bit of Ingenuity Made It Possible to Fit the New Door Perfectly.

the sketch, was measured in continuance with the right side, after which this side was pulled over till the corner reached the mark. This side was then tacked to the floor and the braces were put on.

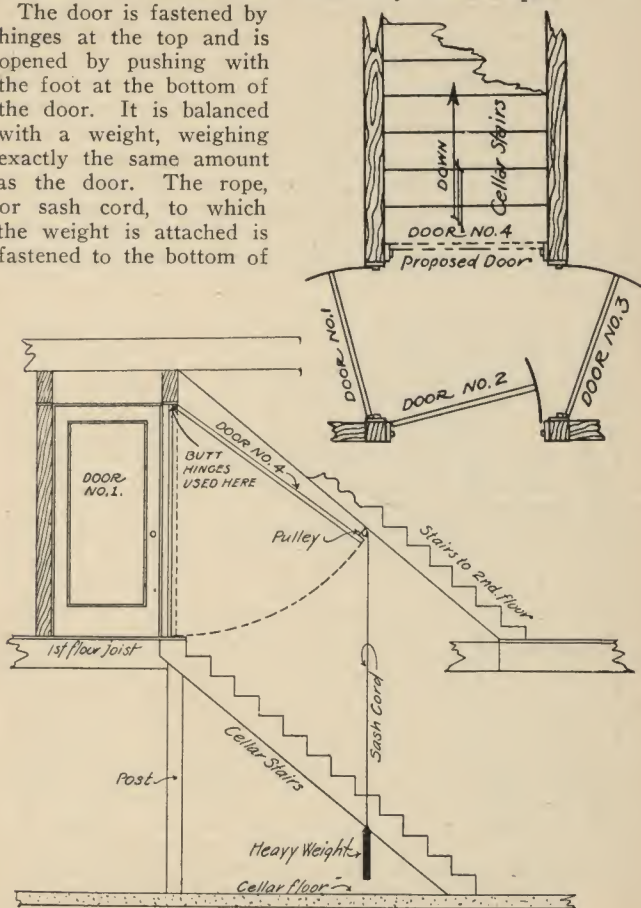
After drilling the holes for the bolts, through the braces, at their crossings, and through the vertical pieces "A," the door was turned over and sheathed up. After the pieces "A" were taken off, holes in the sheathing were drilled over the other holes. The pieces "A" were put on and bolted. The door was then hung, using the same method as used for lowering. The new door not only fitted tight at the top but the small doors underneath could be more easily closed.

PAUL NESS, Fort Staunton, N. M.

A Counter Balanced Door

THE accompanying sketches show a method of hanging a door, with ordinary butt hinges, in a cellar way having an inclined ceiling because of the stairs above. It is a simple solution of a problem made difficult by crowded space.

The door is fastened by hinges at the top and is opened by pushing with the foot at the bottom of the door. It is balanced with a weight, weighing exactly the same amount as the door. The rope, or sash cord, to which the weight is attached is fastened to the bottom of of



The Door to a Basement Stair Under Another Stair Can Be Hung in This Manner for Greater Convenience.

the door and from there is run through two pulleys at the side of the stairway where the weight is attached.

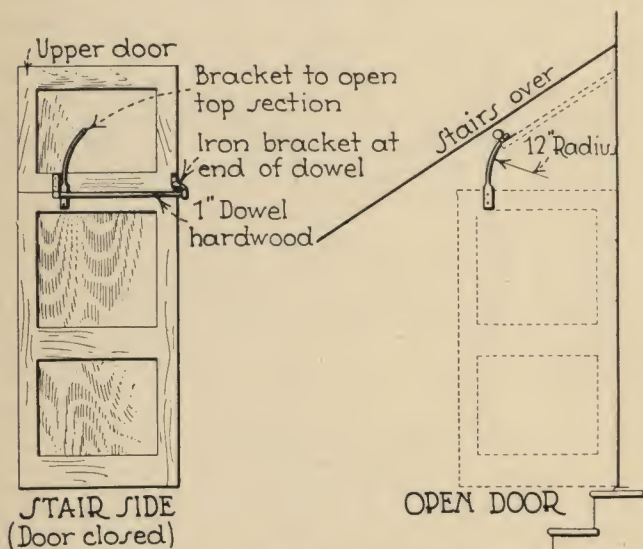
A kick plate is placed at the bottom of the door to prevent marring. Instead of the regular door lock a bolt that can be operated from both sides is used to fasten the door. I have used this combination and found that it works very well.

* JOSEPH P. SCHLITZ, Rt. 2, No. 19, Dubuque, Iowa.

Another Stairway Door

ON page 106 of the April issue, a counter-weighted door was illustrated, as the solution of a stairway door problem. Here is a sketch showing a solution of a similar case which works successfully and is, perhaps, simpler. The door is divided into two sections, the top section being about two feet of the height of the door and hinged at the top. The lower section is hinged at the side in the usual manner and is only that part of the door which will swing open without interference from the stairway above.

A hardwood dowel, one inch in diameter, is fastened to the inside of the upper section by means of iron brackets at each end. This dowel is placed just below the edge of the section and one inch away from it. A $\frac{5}{8}$ inch, round, iron bracket, flattened for screws at one end and with a curving arm 13



A Simple Bracket and Bar Device to Open the Upper Half of This Stairway Door When the Lower Half Is Opened.

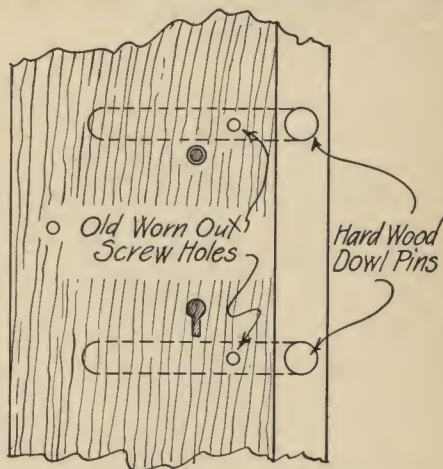
inches long bent on a radius of 12 inches, is fastened to the lower section of the door.

This arm runs up between the dowel and the upper section of the door. When the lower section of the door is opened, in the ordinary way, this arm pushes against the dowel and pushes the upper section of the door up and in, opening the entire door space. The action is positive for both opening and closing the door.

LESLIE W. CUTTER, 65 State St., Bangor, Maine.

Resetting Door Locks

I AM offering a description and sketch of a method I have found very satisfactory in fastening a rim door lock where the holes for the screws that hold the lock in place are worn out so that screws will no longer hold and plug no longer remedies the trouble. I bore two $\frac{1}{2}$ or $\frac{5}{8}$ -inch holes in the lock stile from the edge of the face as shown in the sketch, boring through the center of the worn screw holes, about 2 to $2\frac{1}{2}$ inches deep. I use a sharp bit to make sure that the wood does not splinter.



I next drive a hardwood dowel into the full depth of each hole and cut it off smooth on the edge of the stile, sand paper and finish it. I then put the lock back on and use a little longer screw than originally so that it will reach through the dowels. In this way the new screws will hold satisfactorily.

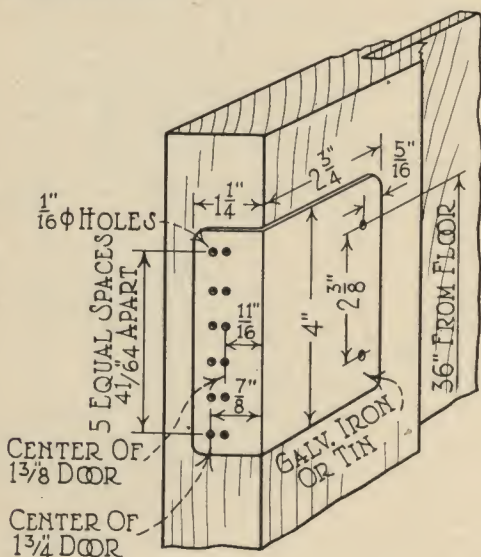
Dowels Sunk into a Door Like This Make It Possible to Reset a Lock When the Screw Holes Are Worn Out.

On a fine job I cut the dowels about $\frac{1}{4}$ inch shorter than the depth of the holes, so that I can use veneer finish on top of the dowels to finish the door. The lock screw hole seldom wears to any extent and can be easily fixed with a plug from the face of the stile. One should be careful not to use too thick a dowel as it is liable to split the stile and make a very unsatisfactory job. Dowels can be bought any thickness desired. The new screws usually split the dowels, which tightens them in the holes so that they will never come out.

RICHARD BARR, R. No. 2, Pine Grove, Pa.

Gauge for Mortising Locks

THE sketch shows a device that I have used for several years for laying out holes to mortise lock in house doors. This is a small template which is held against the corner of the door so that the hole for the knob is 36 inches from the floor. With an awl make a small mark in these holes to locate the knob and key holes.



This Simple Template Is a Great Help in
Fitting Door Locks.

For a $1\frac{3}{8}$ -inch door mark the location of the six holes in the row marked "Center of $1\frac{3}{8}$ " Door." For a $1\frac{3}{4}$ -inch door use the holes in row marked "Center of $1\frac{3}{4}$ " Door." This will give you a row of holes down the exact center of the door and in their proper relation to the knob and the key hole.

Bore all holes with an $\frac{11}{16}$ -inch or $\frac{3}{4}$ -inch bit and mortise out as usual.

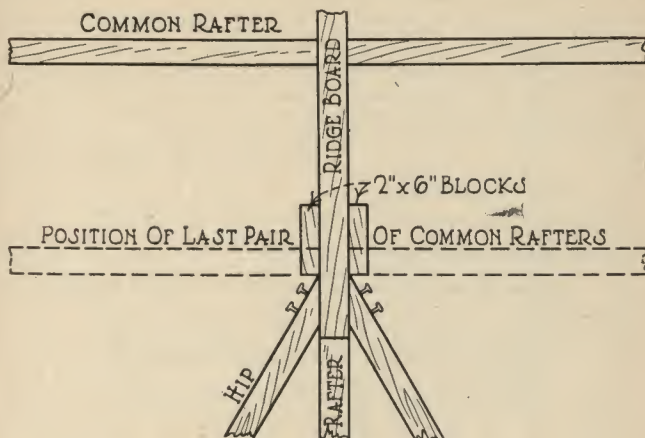
ARNOLD FUOG, 2531 N. Francisco Ave., Chicago.

How to Nail Hip Rafters

IN nailing hip rafters to the ridge board, I always have two blocks of two by six, already nailed to the ridge board, as indicated in the sketch, for the rafter ends to butt against. I place the hip rafters before placing the last two common rafters.

In this way I get the same degree for the rafter ends and

have much greater freedom in nailing. There is not the usual cramped quarters to nail in as when the last pair of common rafters are placed before placing the hip rafters.



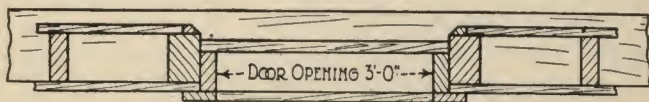
It Is Easier to Nail the Hip Rafters This Way.

After the hip rafters are well spiked onto the ridge, the blocks are easily knocked off and the last pair of common rafters is then placed.

BERT W. CULBERTSON, Jackson, Miss.

Ice House Door Construction

HERE is a sketch of a construction I have used and found very satisfactory for ice house doors. The sketch is a sectional view which explains itself quite fully. The four by sixes at each side of the opening are carried through from the sill to the rafters. The two by fours need only be as high as the door.



A Simple and Rugged Construction for Ice House Doors, Sectional View.

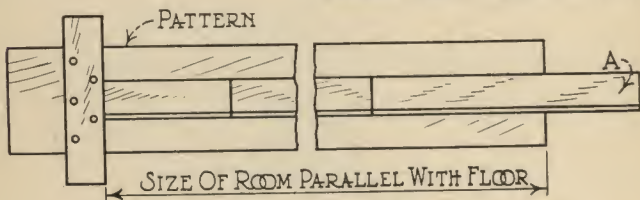
These two by fours serve a three-fold purpose. They act as door stops, inside plank stops, and give a good rugged construction which resists the pressure of the ice and sawdust packing inside the ice house.—JOSEPH BOYER, Park Falls, Wis.

Laying Short Length Flooring

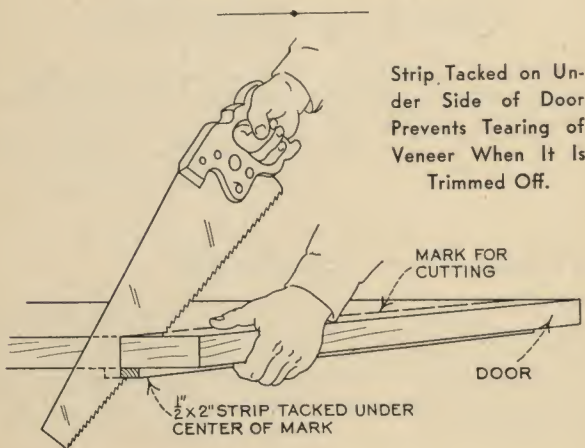
WHEN laying short length, butt-end flooring over a sub-floor, as is often done in the second story of small houses, time and labor can be saved and the quality of work improved by using a pattern as shown in the sketch.

The ends of each length of flooring are squared, any defects are cut out, and the pieces are laid on the pattern end to end. The pattern is the exact length of the floor, so the end marked A is sawed off and used to start the next course.

ELDRED SMITH, Modena, N. Y.



A Flooring Pattern of the Proper Length Used on Saw Horses Speeds Up the Work.



Prevents Tearing Veneer

ABOVE is my contribution to practical job pointers: some time ago I was called upon to trim a quarter of an inch off a veneered front door. This door was dragging over a heavy carpet. The painters had just finished graining the door. We all know that in ripping veneered wood, it is bound to tear on the opposite side. To avoid this, I tacked, with small brads, a one-half by two-inch strip on the opposite side of the door in the center of the mark. In ripping the door, you also rip the strip on the opposite side, which avoids tearing of veneered wood.

W. WESLEY FIELD, Antioch, Calif.

For Marking Door Butts

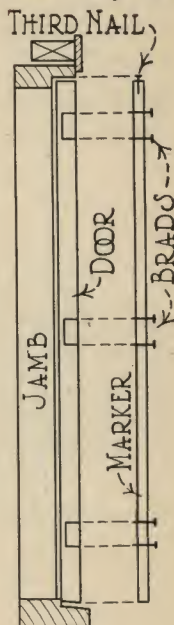
THE sketch shows a marker for butts to be used when hanging heavy doors, such as garage doors. It makes the work easy and is accurate, no matter how many butts are used on a door. With it one carpenter can do the work alone.

First take a light stick, equal in length to the height of the door. Mark the desired location of the butts on this stick and through each mark drive a brad, letting the points of the brads project about $\frac{1}{8}$ inch.

On the top end of the stick drive a three penny wire nail, letting it project about $\frac{1}{8}$ inch, or a distance equal to the desired clearance at the top of the door. When you are ready to mark the butts, place the top of the stick flush with the top edge of the door and tap the brads lightly so each brad makes a light mark on the door. Next place the stick against the jamb with the head of the three penny nail resting against the top edge of the jamb. Again tap the brads lightly marking the jamb.

ROMEO LAROSE, 8 Osborne St.,
Rochester, N. Y.

**With Such a Stick One Man Can Mark
Doors and Jam for Butts Accurately.**

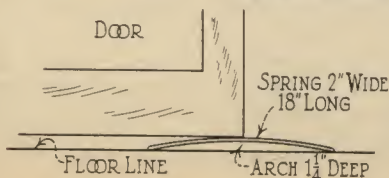


Simple Aid in Lock-Setting

THAT necessity is the mother of invention, seems to prove itself in the discovery that a useful and inexpensive tool may be made from an automobile spring. Take a thin leaf, 18 inches long 2 inches wide, with an arch of $1\frac{1}{4}$ inches. Square and thin it at the end. To hold the door steady while setting a lock, place the spring on the floor beside the door. With the weight of the foot, flatten the spring and pull the door over it. When the spring is released, it holds the door fast while the work is being done.

This tool is very helpful in lifting mouldings of all kinds. They never split when so removed. It is also a help in tearing off old wooden shingles.

MYRON FLINTJER, Leavenworth, Kan.



**Auto Spring Keeps
Door Open.**

Mending Broken Screens

If, at the first appearance of a hole in a screen, it is properly repaired, the screen can be saved for further service. Take a piece of wire cloth and cut from it a square $1\frac{1}{2}$ inches larger than the diameter of the hole. From each side of this square, remove the wires running parallel with the side to a depth of about half an inch, as shown in figure 1.

When this is done, bend the projecting ends to a right angle as indicated by the dotted lines in figure 2. Now slip

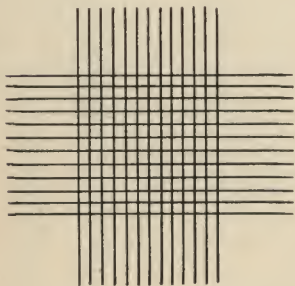


FIG. 1



FIG. 2

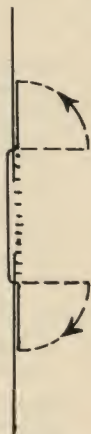


FIG. 3

A Method of Applying a Patch to a Hole in Screen Wire.

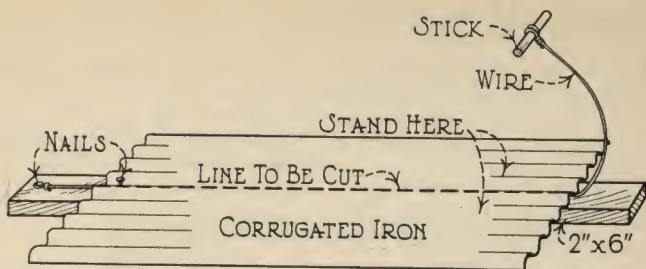
these bent ends through the screen so that the square piece covers the hole. The projecting ends can then be bent back, as in figure 3, or may even be slipped through the screen again, if desired.

H. H. SIEGLE, Emporia, Kan.

Cutting Corrugated Iron

TO many, the cutting of corrugated iron along the grooves is still a problem. Some use the back of a saw, while others still hold to the tin snips. I have found a method which is an improvement over both of these.

First take a two by six, or heavier piece of lumber, that is longer than the iron to be cut. At one end of this board securely fasten the end of a piece of wire, which must also be longer than the iron to be cut. Wrap the free end of the wire around a small stick to serve as a grip.



A Simple, and Accurate Method of Cutting
Corrugated Iron with a Wire.

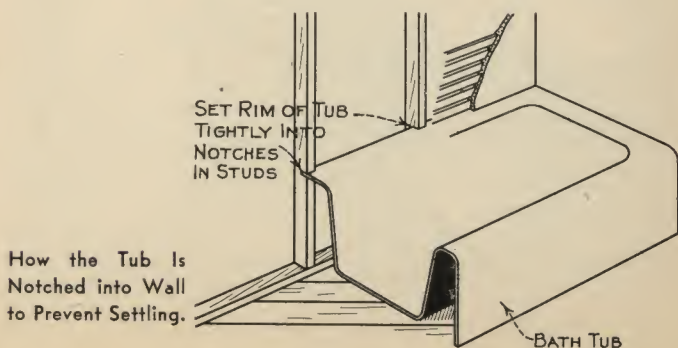
Straighten the wire out along the board and place the corrugated iron on the board, over the wire. With the iron in the proper position tack it to the board with one nail placed near the fixed end of the wire. Stand firmly on the other end of the iron and grasp the stick at the end of the wire in your hands. Pull steadily, without jerking, and as the wire cuts the iron step backward guiding the wire along the mark where the iron is to be cut. You will find the iron can be cut quickly and accurately by this method.

JACK BOYDSTUN, Natchitoches, La.

Prevents Bathtub Settling

TO PREVENT bathtub settling away from the plaster and leaving a bad crack, notch the rim of the tub tightly into the studs as shown in my enclosed drawing. We find this very simple to do and yet it prevents a lot of trouble and makes a better job.

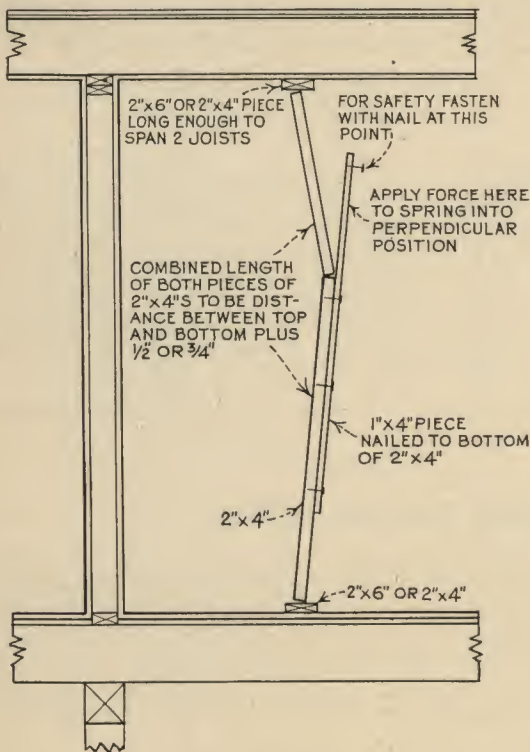
B. T. ALLYN, 7 E. 60th St. N., Portland, Ore.



Self-Lifting Shore

HERE is a very practical idea that we have used many times in our work. It is a carpenter's jack or self-lifting shore. This device can be made of scrap pieces and is remarkably effective and quick-acting. It beats wedging where pounding is objectionable.

F. M. HAMLIN, Lake Villa, Ill.



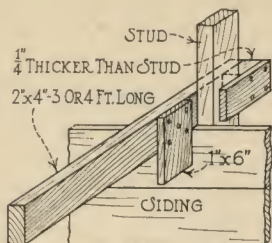
Help for Applying Siding

THE device described in the text and sketch following will be found a time and trouble saver in the event that it is necessary for a carpenter to apply novelty drop siding without assistance. It may be constructed quickly on the job and thrown away after the job is finished, obviating the necessity of transporting a bulky device to the next undertaking.

It is used by hooking it around the stud and over the siding board so that its weight forces the lap of the siding tight against the stud. The operations of marking and sawing may then be carried out by one man for he can mark

the end against the corner board or opening trim, then saw it by sliding the board back a short distance, shove the joint tight, and repeat the operation at the opposite end.

ELDRED SMITH, Modena, N. Y.

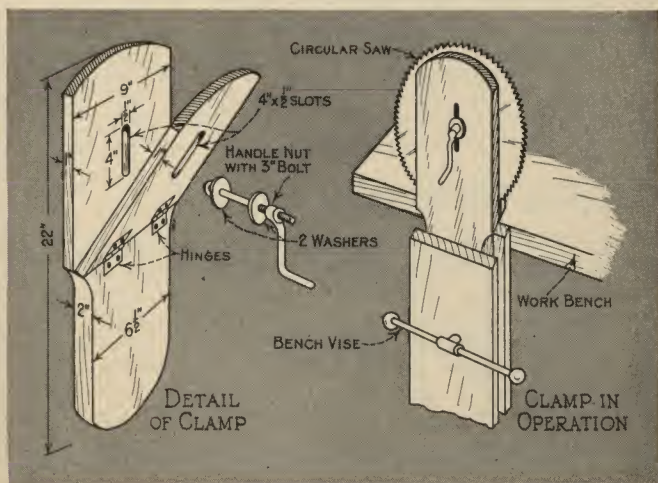


This Simple Device Holds Siding in Place Until It Can Be Nailed, and Makes a One-Man Job.

For Filing Circular Saws

USING the ordinary bench clamp to hold circle saws, one usually finds his saw falling when turning, thereby damaging the teeth. This objectionable feature is overcome by using the circle saw filing clamp shown in the illustration. It consists of 2-inch material. The figure at the left shows the clamp in detail. 4 x 4½-inch holes are made up and down the center. This is to receive the bolt and handle nut by which the clamp is tightened.

The figure at the right shows the outfit in operation. First the saw is inserted between the jaws of the clamp. The bolt is next put through the saw mandrel hole and tightened by means of the handle nut. In changing the position of the teeth, simply loosen the clamp slightly and turn saw, all this with no danger of slipping. A. S. WURZ, Jr., Rockyford, Alta., Can.

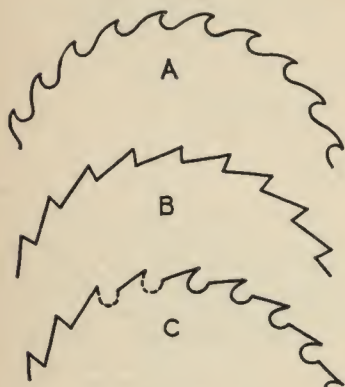


Device Holds Circular Saws When Being Filed.

Sharpening Power Saws

I HAVE been a reader of the *AMERICAN BUILDER* for many years but have never written any "Pointers" before, so here goes.

The average small carpenter shop, cabinet shop, and amateur woodworker today uses a lot of small 6, 8, and 10-inch power circular table saws. These, when used a lot, have to be sharpened and put in shape quite often.



A—Shows New Saw; B—After Flat Filing; C—Recommended Rat Tail Filing.

Most of them are hand filed with a flat file and it isn't very long before the teeth have a low, flat look to them, as in B, and the cutting hook of the original teeth when the saw was new, as in A, is gone.

A very good way to fix them is to get a small, round rat tail file that will fit the teeth and file out the notches, as in C. They can then be retouched up a little with a flat file afterwards.

The results will be very pleasing to the saw user and he will find the saw cuts faster and bet-

ter, and will not have to be sent back to the factory to be gummed out, and tie up the use of the saw.

C. C. AMES, Mayville, N. Dak.

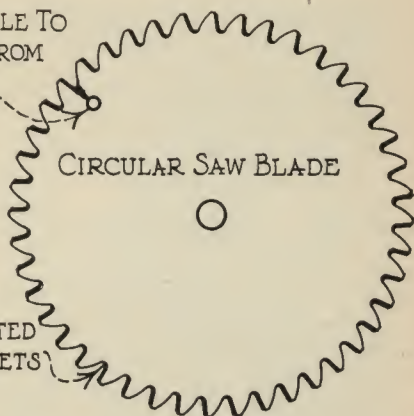
Stopping Cracks in Saws

THROUGH improper filing usually, and other causes sometimes, circular saws often develop cracks on the rim. Such cracks will continue to grow and render the saw useless unless something is done to stop them. About the best thing to do is to drill a hole directly through the saw in such a position that the crack will grow into it. A $\frac{1}{8}$ or $\frac{1}{16}$ -inch hole is large enough.

When this is done the crack will go as far as the hole and stop. The reason is that the leverage exerted by the crack is distributed over the rounded side of the hole, instead of localizing on one point. Thus the steel is enabled to withstand the strain without further breaking.

This remedy also suggests the logical means of preventing such cracks. That is to avoid sharp bottomed gullets between teeth, and make round ones. A few strokes of a small file will serve to do this if a wheel is not handy, but using a wheel is quicker. If a wheel is used, however, care must

DRILL $\frac{1}{8}$ " OR $\frac{3}{16}$ " HOLE TO
PREVENT CRACK FROM
EXTENDING ANY
FARTHER



CRACKING PREVENTED
BY ROUNDED GULLETS

How a Hole Will Stop a Crack in a Saw and
How Proper Filing Prevents Cracks.

be taken not to grind too fast or the temper of the saw blade will be disturbed. If the saw shows any tendency to "blue" in the grinding the safety limit is being approached.

JOHN E. HYLER, 501 Broadway Ave., Peoria, Ill.

Editor's Note—This "Pointer" was submitted to one of the large saw manufacturers for approval as it seemed that accidents might result from trying such a method if it was not good practice. The following comment was received:

"This is a common practice and is in general use throughout the country and usually prevents the crack from extending any farther into the blade. However, we do not recommend using circular saws which are cracked even though a hole be drilled at the bottom of the crack.

"We believe that you will agree with us that a circular saw which is cracked is a dangerous tool to operate, considering that it is running at a speed of anywhere from 10,000 to 15,000 feet rim motion per minute and if this slightly excess side pressure is brought to bear on this saw, or if it is permitted to operate with an insufficient amount of set or the teeth are dull, or it is not properly tensioned it is very difficult to say just what will happen. The saw is liable to fly to pieces, possibly injure the operator, and damage the machine.

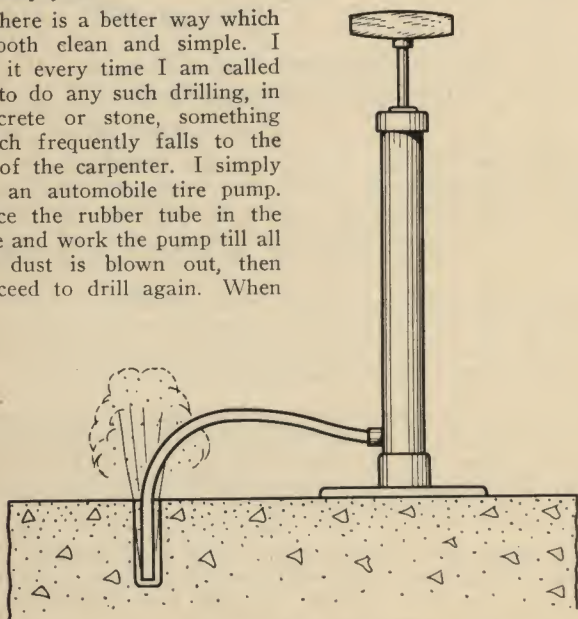
"We always advocate keeping the teeth gullets well rounded and free from case-hardening at all times, then if the saw is kept sharp and with the proper amount of set on the teeth for clearance and it carries the right amount of tension for the speed at which it is being operated, the chances are not one in a hundred that it will develop cracks.

"What we endeavor to do is to guard against the breakage by suggesting the proper means of fitting the teeth and keeping the saw in order rather than to recommend the drilling of holes at the bottom of a crack after breakage has taken place, but to answer your question, many cracked saws today are being operated satisfactorily with holes drilled at the bottom of the crack."

To Clean Drill Holes

THE usual way of removing dust from holes while drilling in stone or concrete is to pour water into the hole. This carries out the dust but is objectionable because the water spatters not only the driller but everything nearby and makes a messy job.

There is a better way which is both clean and simple. I use it every time I am called on to do any such drilling, in concrete or stone, something which frequently falls to the lot of the carpenter. I simply use an automobile tire pump. Place the rubber tube in the hole and work the pump till all the dust is blown out, then proceed to drill again. When



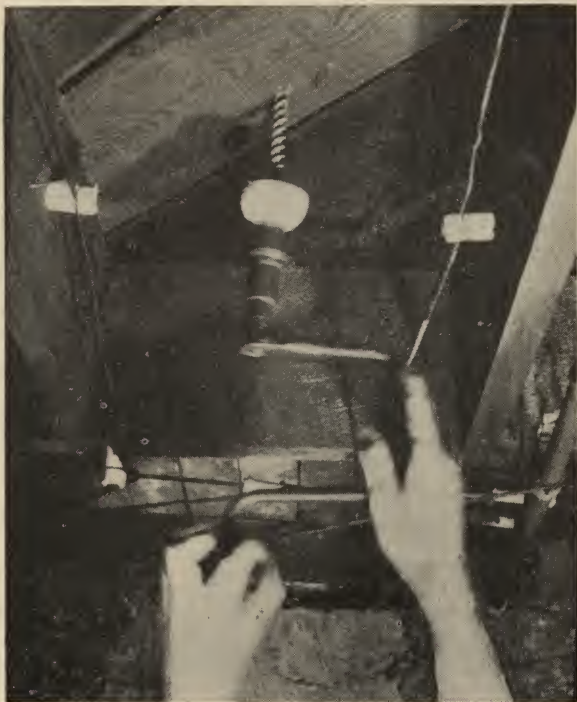
An Automobile Pump Clears the Dust from the Hole When Drilling.

too much dust has again accumulated use the pump again as often as necessary.

H. H. SIEGLE, Emporia, Kan.

To Catch Overhead Borings

TO prevent the borings from an auger used overhead, from dropping in the eyes, half of a rubber ball can be used as a cup to catch the borings. The ball is split in half, a



The Rubber Ball Cup Catches the Borings Instead of Letting Them Fall into the Workman's Eyes.

hole is punched through the center of one half and the cup is slipped over the bit and rests on the jaws of the brace. This cup will catch all the borings and allow the worker to stand directly under the brace where he can get the best upward pressure.

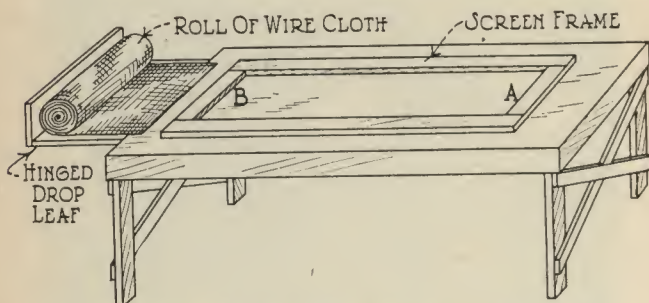
RAY J. MARRAN, 3225 E. 28th St., Kansas City, Mo.

For Stretching Screen Wire

ON a recent job which involved the nailing of wire screen cloth to 500 screen frames, the work was simplified and better done, with less labor and expense, by using a special work bench as shown in the sketch. The loose end of the

roll of screen wire was tacked to the screen frame at A. It was then unrolled till the roll rested against the stop on the hinged drop leaf, with the leaf in the horizontal position, as in the sketch. With the roll held fast in this position the leaf was dropped drawing the wire tight across the screen frame and the wire tacked around the frame. This rig works best with two men and when so used will turn out a completely screened frame in five minutes.

ELDRED SMITH, Modena, N. Y.

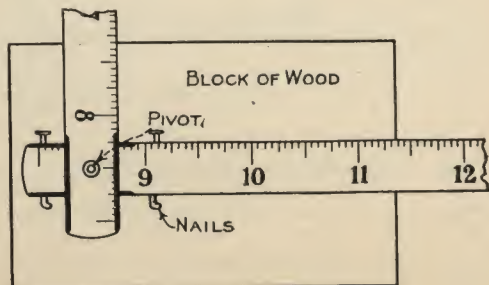


With This Special Bench Two Men Put Wire Cloth into a Screen in Five Minutes.

Tightening Loose Rule

FIND enclosed a sketch and explanation of how I saved my folding rule from the scrap heap. It got so limber it was aggravating.

Drive two eight penny nails into a block of wood $\frac{1}{3}$ of the way in, 1 inch apart, and bend over parallel to one another. Bend the rule to a right angle at the joint, then place on the nails as shown and give a light blow with hammer over the rivet. Hit hard enough to bend the rule slightly. Then turn the rule over and give the other side a light blow. Do this on both sides of the rule at every loose joint, on all joints, to stiffen them.—AUSTIN GRIFFIN, Chapin, Ill.

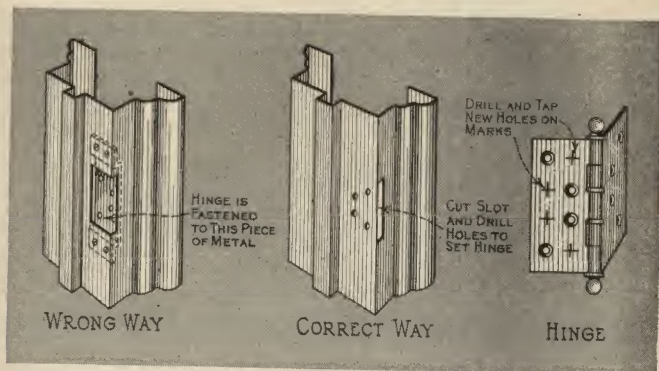


The Loose Joints Are Fixed by This Method.

Reversing Metal Door Swing

HERE is a method I use in reversing the swing of a door in a metal door frame.

Instead of cutting the metal door frame as many carpenters do, as in illustration at right, and fastening a piece of metal inside in order to screw the hinge, I cut a slot on the face of the door frame the thickness of the hinge, as in the middle figure. Then I take the half hinge that is to go to the door frame, and drill and tap four new holes in it, as shown at right.



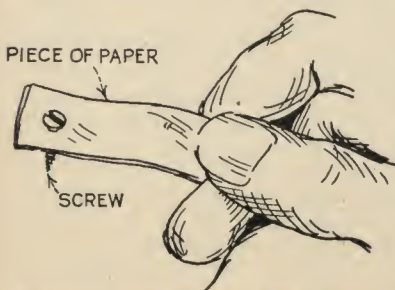
To Reverse Swing of a Metal Door, Slot Is Cut.

When this is done, I take the hinge and place it on the door frame where it is to go and trace the new holes of the hinge to the door frame. These holes in the door frame are to be drilled a little larger than the machine screw to be used, and they are also to be countersunk. When this is done, the hinge will just have to be put in the slot, and fastened with the machine screws.—PHILIP CAPORRINO, New York City.

To Start Small Screws

HERE is one for your "Practical Job Pointers" Department.

This is how I hold small screws: just stick them through a heavy piece of paper and you always have them when you want them. When you are ready to use the screw, hold the paper in position so that the screw is where you want it, and give it a tap with hammer. When it is well started, just tear the paper off. Carpenters around here all like your magazine, but work has been slack.



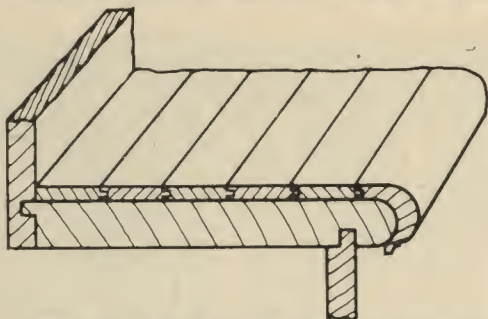
A Handy Way to Hold Small Screws
When Starting Them.

HOWARD J. BRADLEY, Bridgeport, Conn.

Reconditioning Stair Treads

THE sketch shows a method I use for reconditioning badly worn stair treads. I designed a nosing which would fit over the old nosing and had it machined on a shaper and matched to $\frac{3}{8}$ -inch flooring. I then glued to this nosing enough pieces of flooring to cover the tread as shown in the sketch.

This new tread was scraped and sanded and then laid on the old tread, and nailed to the face of the riser and at the



A New Tread of $\frac{3}{8}$ -Inch Flooring and a Special Nosing Applied Over Worn Stair Treads.

ends. Before laying the new tread, however, the low spots in the old tread were shored up. This method works equally well for straight treads or winders.

FRED W. WESLEY, Burks Falls, Ont., Canada.

To Lay Out Show Window

THIS method is usable in the drafting room or out on the job. First determine the center or axis line (CL) as shown in my drawing, by centering the front and then drawing a line as far back on the floor as possible, using the same measurement from wall in front. The greater distance between these points, the more accurate will be the laying out.

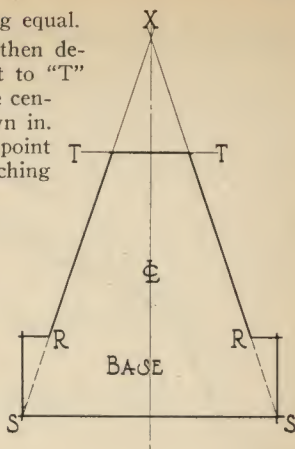
Next draw a line from "B" through "C" to "D" on this axis line. Lay out correctly the measurement "B" to "C". Parallel line "C" to "E" with center line and continue through to "K". Repeat the operation from "F" through "E" to "G". Run "F" to "H" line parallel to center line and lay out correctly the measurement "F" to "H". The next step is to draw lines from "H" through "I" to "J" on center line; lay out correct measurement "I" to "K" already lined off. With straight edge lay out line from "K" to "K", determining point "L". Line "L" to door posts can be laid out either by drawing lines to intersecting point "N" on center line or by laying out from door posts where slight errors can be corrected. The completed design will show both sides concentric to the center axis.

The above method may be used for any laying out of like nature; for instance any tapered design as where foundation

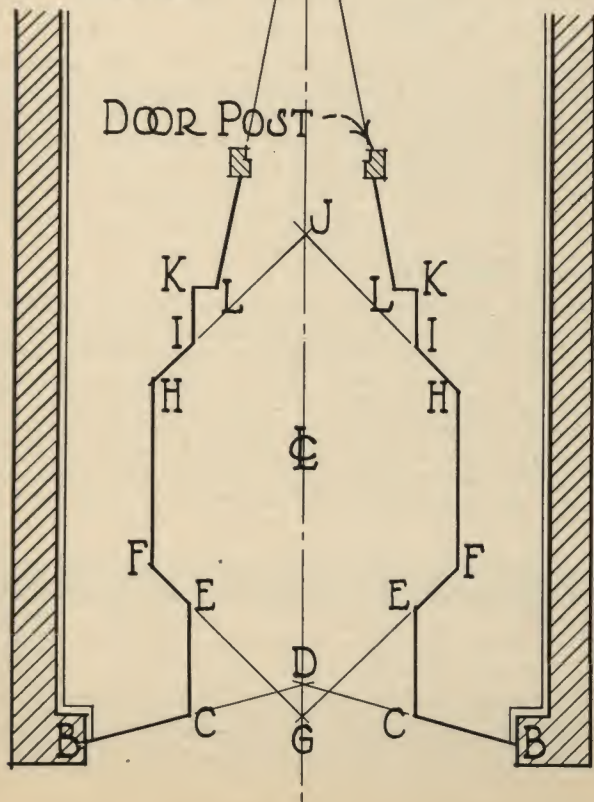
walls are designed, both sides being equal.

First lay out base member and then determine point "R". Lay out height to "T" and draw top line "T" to "T". The center line (CL) should be first drawn in. From point "S" to intersecting point "X" on center line, draw lines touching points "R" and "T"; complete the lines.

A general practice and an excellent one is to work from a center line at all times, whether it be in the office or on the work.—J. T. NARBETT, Architect, Richmond, Calif.

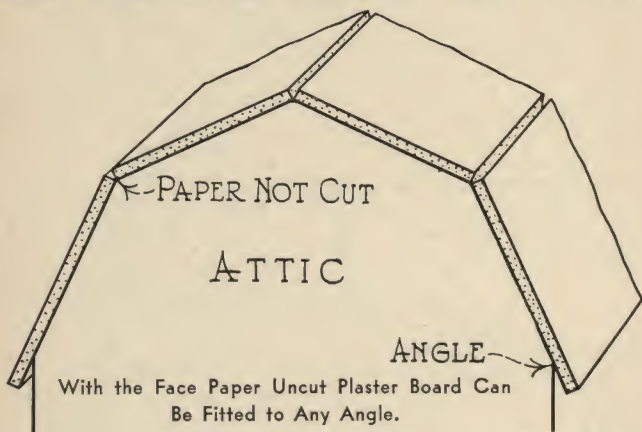


Method Followed in Laying Out Store Front.



Applying Plaster Board

IN applying plaster board in an attic, or any place where there is an inside angle to be turned I find the following method works well and reduces the number of cracks.

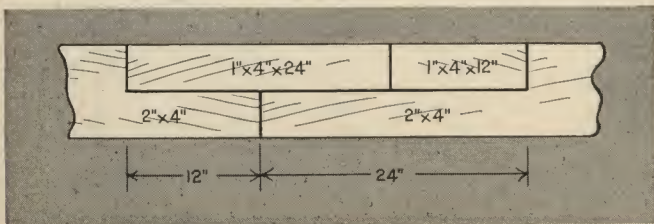


I cut the paper on the back side of the board with a knife. The board can then be broken, without breaking the paper on the front side, and fitted to any angle. The paper on the face side is strong enough to hold the board together and eliminate a crack in the wall surface. The sketch shows how the board is fitted to an angle by this method.

CHARLES N. MANGER, Ulster, Pa.

Splicing Timbers

HERE is a practical way of splicing two timbers (self contained) when there is no other lumber available, and having a timber plus the length of both timbers. This timber will be as durable as a one-piece timber. Halve a piece out of one end of a 2x4, 1x4x24 inches. Halve a piece out of the end of the other 2x4, 1x4x12 inches. Take a 1x4x24, and nail it on end of twelve-inch cut out, forming the splice. Use 1x4x12, as filler, as per sketch. I am a new subscriber to the AMERICAN BUILDER and find it very educational.—NORMAN H. WENTWORTH, Hudson, N. Y.

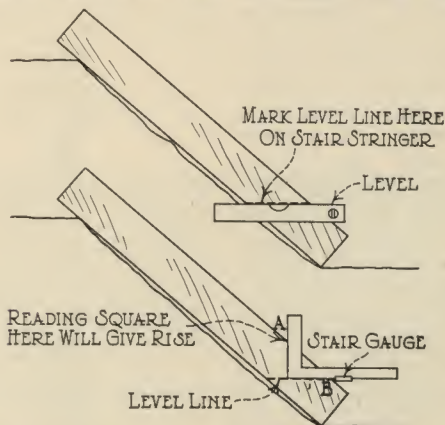


Method Suggested for Splicing Heavy Boards or Timbers.

Practical Stair Building

I RECENTLY built a stairway up an 80-foot terrace. My plan for work provided an easy way to lay out stairs up a high terrace where the distances are too great for regular stair methods. First establish both top and bottom landings and stretch a line between them. Next set up a stringer bringing the bottom of the stringer to line.

Hold the level on the side of this stringer and make a level mark. Clamp a stair gauge on the blade of the square at the desired width of tread and place it on the stringer,



This Is a Handy, Practical Method of Laying Out
Stairs Up an Unusually High Terrace.

letting the heel of the square come down to the level line. Now reading the square at the point where it intersects the top of the stringer, the point marked A in the sketch, gives the rise.

By measuring the total run, from the top to the bottom landing, with a steel tape, and dividing this by the diagonal of the square, the distance from A to B in the sketch, gives the number of risers required. Changing the width of tread a fraction of an inch either way will make the division come out exactly even.—HIRAM L. BANE, R. R. 1, Charleroi, Pa.

Cutting Stair Stringers

I AM submitting here two methods of cutting stair stringers with a good proportion between the tread and riser, which might prove of interest in the "Practical Job Pointers" Department:

Method 1—Let the product of the tread and riser equal the number 66. For example, suppose the riser is 8" high, then the tread will be 66 divided by 8 which is $8\frac{1}{4}$ ". The height of the

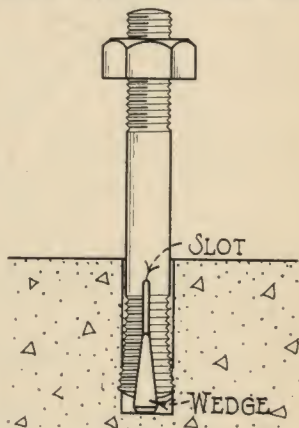
riser may be found in the same way by dividing 66 by the width of tread.

Method 2—To the height of the riser in inches, add a number that will make the sum of 12; double the number added, and the result will be the width of the tread in inches. For example, assume the height of the riser is 7"; then 7 plus 5 is equal to 12, and 5 times 2 is equal to 10, the width of the tread in inches.—ROMEO LAROSE, Rochester, N. H.

Emergency Foundation Bolts

OFTEN, on a construction job, there is need of putting in a few extra foundation bolts. When one does not have enough of the regular commercial type to provide the extras, it is a simple matter to meet the emergency with standard bolts. When used as shown in the sketch the standard bolt makes a very good substitute.

Just saw a slot in the end of the bolt and start a small, steel wedge into it, then put the bolt in the hole. When the wedge is resting on the bottom of the hole, drive the bolt home. The wedge will spread the split end of the bolt till it grips firmly.



CHARLES H. WILLEY, Hill Crest
Acre, Penacock, N. H.

An Ordinary Bolt Can Be Used
as a Foundation Bolt.

Handy Nail Pocket

WHERE a worker must assume a bending position as when nailing flooring, a 2" by 3" space turned up on the trouser leg provides a good pocket for the nails, as it keeps them within easy reach. It is advisable of course to sew the cuffs in this position permanently, and it will be found convenient to form several narrow pockets instead of two or three wide ones, so that the nails will be held vertically and thus readily can be taken out. The height of the pockets should be less than the length of the nails.

Another practical idea I have found is as follows:

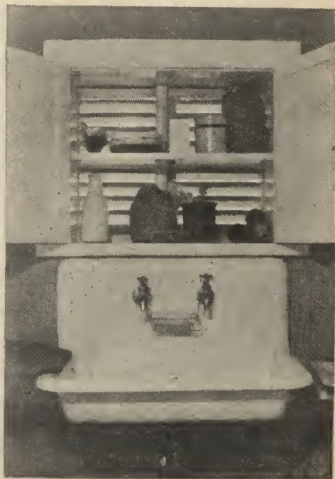
If a piece of rubber matting is nailed on the top of your step ladder, it will prevent small tools from falling off. The edges of course should be doubled under and tacked to form a tray. Such a mat will also reduce the risk of falling when you are standing on top of the ladder.—JOHN RICHARDS, 1318 First Ave., South, Payette, Idaho.

Window Cooler

I NOTICED the winter window cooler in your February number and having had a similar experience to that of Mr. Stanley G. Greene, I thought the cooler I have made might be of interest to AMERICAN BUILDER readers.

My mother asked me to fix up some shelves outside her kitchen window and enclose them with window screen netting. I told her that I did not think such an arrangement would look very good and that I thought I could make her something much more serviceable and better to look at. I am enclosing an inside picture and an outside picture of the little cabinet that I have made.

The jambs and top are made of 2" x 12" material. The ventilator slats are made of $\frac{5}{8}$ " x 4" material put in at an angle of 45 degrees. I took the few pieces of siding off the house, and after placing the cabinet, cut the boards to fit back closely.



W. F. Hobbs of Texas Built This Winter Cooler.

Screen wire is tacked on the back side of the ventilator. The pipe running up through the box is the vent pipe for the sink. It would have been easier to place the cabinet in some other position rather than right over the sink, but as it happened the place I have this one has been the most convenient for us.

It has proved a very convenient addition to our kitchen. In this part of the country it rarely ever gets cold enough to spoil food. We are able to keep milk this way for about four or five months of the year, and during the rest of the year it makes a very good storage space for other food supplies, being on the north side of the house where the sun never shines on it.—W. F. HOBBS, Wharton, Texas.

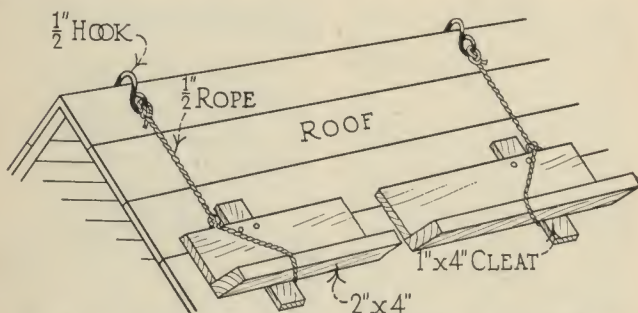
Walk Board for Shingling

THE sketch shows a walk board which I use either on new work or over old roofs. To make this I use two lengths of 12-foot lumber, which is long enough for most jobs. One of these pieces is a 1-inch board and the other a two by four. I nail the two by four to the other piece, as shown, and then nail on a short piece of one by four close to each end, as a cleat.

I tie two $\frac{1}{2}$ -inch ropes around this board and attach hooks at the other ends. With these hooks, hooked over the ridge you have a place to walk and also a place to lay your shingles. It can be moved up the roof as you work. The hooks are ordinary ladder hooks.

This is especially intended for laying asphalt shingles as you can not walk on them, or nail through them without damaging them.

E. W. CONNER, R. F. D. 3, Lacona, Iowa.



This Is Especially Useful in Laying Asphalt Shingles, Saving Them from Damage and Making the Work Easier

To Make Brass Pipe Leakless

OCCASIONALLY I find a pipe fitter who claims that he does "superior" work and so does not lamp-wick his brass threads. In my opinion he will have trouble with leaks where the fitter who does wick his threads will not have trouble, other conditions being the same.

During the past two years considerable research work has been done on lamp wicking and real strides have been made in the manufacture of the product. As a result all of the better piping contractors I know are using lamp wick on brass pipes.

The pipe fitter who does not use wicking usually uses a "dope," or compound. It is much quicker to simply apply compound and make up a joint than it is to apply both wicking and compound. The fitter who uses wicking usually also uses compound and does not use wicking only. He uses wicking *and* compound because he wants to make the best joints that can be made.

Less time is required to wick iron pipes than is required to retrace threads with new taps and dies to insure a tight fit. In order to make sure some pipe fitters retrace with new taps and dies and in addition use lamp wicking and compound.

Carelessness is the principal cause of leaks. The entire burden of keeping joints tight is placed on joint compound, perfect cutting dies, and brute tightening force. I will admit that there was a time, and not so long ago either, when I believed that the pipe fitter who used lamp wicking was a "sloppy" mechanic. I thought that the use of wicking was comparable to stuffing an old pillow into a broken window for prevention of leaks. But I was wrong and have changed my mind in spite of the recent statement by Henry L. Mencken, who said: "When a man tells me that anything I have written has caused him to change his mind I put him down for an ass." I have changed my mind a number of times and this was one of them.

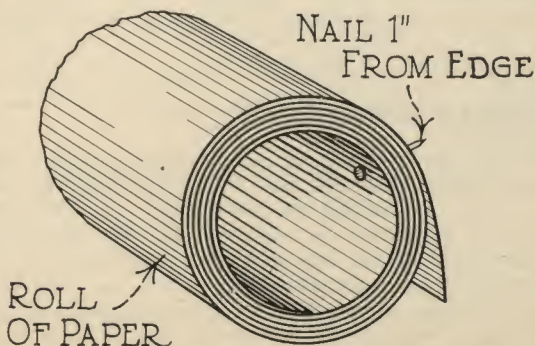
W. E. SCHAPHORST, Newark, N. J.

Easy Handling of Building Paper

NOT long ago I had occasion to use some building paper while working alone. As often happens there was plenty of wind and the weather was cold. Every now and then the roll of paper would slip in my cold hands and sometimes it would go spiraling down the side of the building. I finally thought of a way to stop this difficulty.

I drove an eight-penny nail through the roll of paper about an inch from the end of the roll, with the head of the nail inside. After that the roll handled so much better that I always use this method now. The nail hole, being near the edge of the paper, does not harm as it is covered by the lap. This also saves much paper that is usually torn when the roll gets loose.

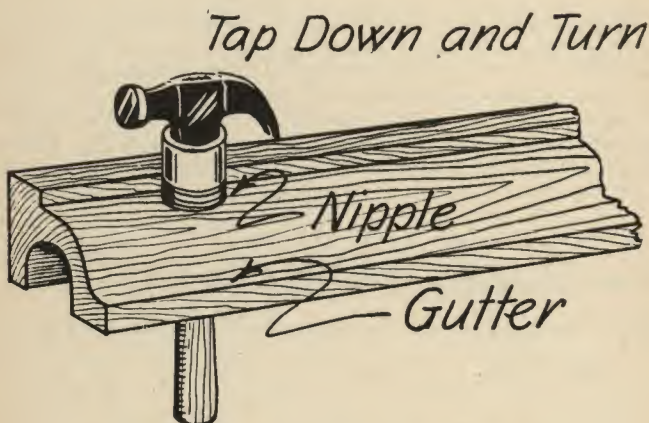
EARL R. SPAHR, 31 Chittenden Ave., Columbus, Ohio.



A Nail Driven Near the Edge of a Roll of Building Paper Makes
Easier Work and Saves Torn Paper.

To Tighten Gutter Nipples

ANYONE who has had difficulty in screwing gutter nipples into a wooden eave trough because of the lack of a stillson wrench in his tool kit will find this little tip helpful. Start the thread of the nipple by hand, turning till it is tight. Then drop the hammer handle through the hole in the nipple.



A Hammer Will Serve to Screw Gutter Nipples
into Wooden Eave Trough.

The square corners of the under side of the hammer head will touch the inside of the nipple. Tap the top of the hammer once or twice so that the corners dig in. With the added leverage of the length of the hammer head it is possible to screw the nipple down without any wrench.

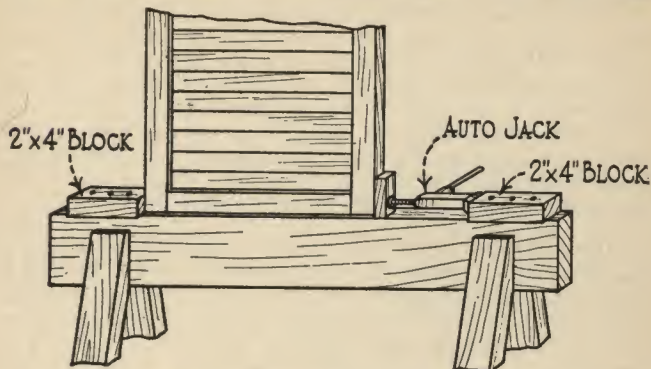
R. H. MAYER, Hollyburn, P. O., West Vancouver, B. C.

To Tighten Loose Blinds

I FIND in my work as a painter and carpenter that a window blind that has not been kept properly painted is soon out of square and the joints open. I use the method illustrated by the sketch for tightening up such frames before repainting and it works very well for me. It closes the joints just as tight as they were when new.

Nail two pieces of two by four on trestle bench made of two by fours. Space these pieces wide enough apart to allow the blind to be placed between them and also a small automobile jack, using a small block of wood between the blind and jack to prevent marring. I first square the blind and

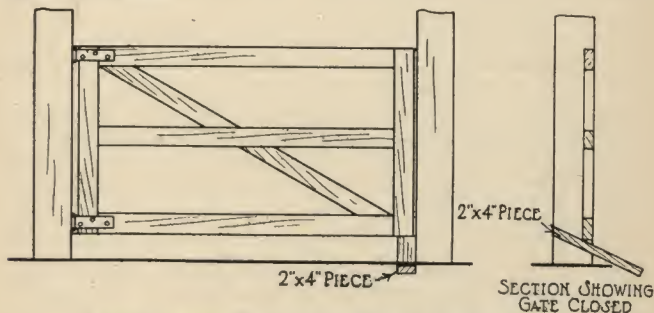
then place it in this clamp and close up the joints and repeg it. I then paint it and have a perfectly square, new looking blind.—BERNARD PARSONS, McAfee, Mercer County, Kentucky.



With Three Blocks of Wood and a Small Automobile Jack
Wooden Blinds Can Be Tightened as Good as New.

It Prevents Sagging

It is practically impossible to keep a large, low swung gate from sagging and dragging when being opened and closed and the weight of the gate on the hinges puts considerable strain on them.



With This Device the Gate Won't Sag and Drag
in Opening and Closing.

Nail or bolt a piece of wood, with smooth top, to the latch post of the gate in the position shown. Set the angle to the proper degree required to bring the gate level when closed. The slope of this piece brings the gate level as it is closed and removes practically all weight from the hinge post as well as the gate braces when closed.

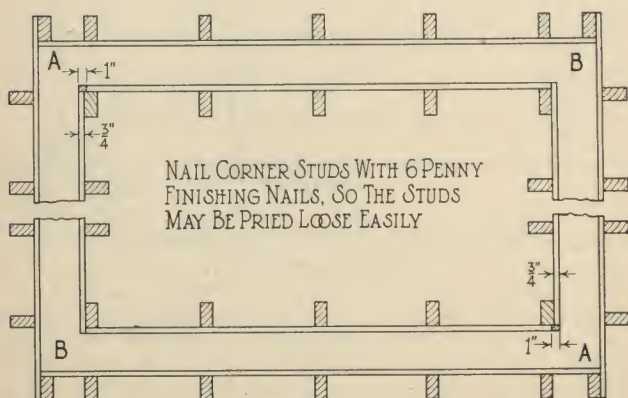
CHAS. J. MAREK, Jourdanton, Texas.

Form for Concrete Tank

A METHOD of making a form that can be removed easily is shown at the right. The corner studs should be nailed with six penny finishing nails, and the end sections of the form should not be nailed to the corner studs at all. The end sections can be held in place by the interior bracing. The side sections are to be made with a vertical strip one-quarter inch wider than the thickness of the end sections, and tacked to the corner stud (but not to the end section) with just enough small nails to keep it in place. After the form is set up and thoroughly braced, it is ready for concreting.

To remove the form, first pry the corner studs loose and take them out. Then, at the corners marked "A" in the sketch, gently pull the side section inward. It will slip away from the corner strip without much trouble, and is lifted out. After removing the side sections, the end sections are removed in the same manner, by pulling them loose first at the "A" corners. The corner strips are then lifted out and the job is done. The forms are not damaged, and may be used over again if more than one structure is required.

In making a form of this kind, if an outside form is required, it is well to take care to space the studs on the outside form so they will come directly opposite the studs of the inside form, as shown in the sketch. The studs should be allowed to project above the top by at least six inches, so the outside and inside forms can be tied together by strips of wood nailed across near the top.—H. N. ROWLAND, Parkerford, Pa.



These Forms Come Out Easily.

From a Carpenter's Wife

I AM a carpenter's daughter; also a carpenter's wife, and I am sending an idea I have used for years. Simply sew on two buttons, good and strong, to the carpenter's aprons. To

these attach the straps from an old pair of suspenders. This makes a really strong place for the hammer to go and it will outlast the apron. Perhaps bachelor readers can get their sweethearts to do this for them.—CELINA GARDNER, Stony Creek, N. Y.



A Home-Made Hammer Holder.

Wood Screws into Plaster

PUTTING wood screws into plaster walls has always been a troublesome job. The methods devised for making a screw secure in plaster wall have always been complicated, difficult and slow. It has usually involved the insertion of a wooden plug in the wall first or the use of a very long screw and hoping to reach the wooden lath back of the plaster. Even so, a clean hole was almost impossible; the cracking and crumbling of the outer plaster was unavoidable.

Here is a method for putting a screw securely into a plaster wall without marring the smooth plaster surface,—a method that is simple, speedy and sure.

Insert an $\frac{1}{8}$ inch twist drill into a hand drill; coat the twist drill with soft soap and holding the drill SQUARELY to the wall, SLOWLY make a hole in the plaster. Then likewise coat the screw with soft soap and put in SLOWLY. The simplicity, firmness and neatness of the result will surprise you! Of course, the hole drilled should always be smaller than the screw itself; when a very large screw is to be used, a small hole is drilled first and the hole is gradually enlarged by larger drills used in succession.

I found this idea particularly valuable in putting up porcelain fixtures on bathroom walls, also shelves, etc.—C. NYE, 975 Union Avenue, Bronx, New York.

To Keep Glass Clean

HERE are a couple of ideas which I have found handy in working. When I have occasion to set small panes of glass, as in cabinets or French doors, where the sash or frames will need several coats of paint, I cut sections of paper the size of the panes of glass and place them on the glass as I insert it in the opening. Paper can be used on both sides of the glass. When the painting is finished I



Paper Over Glass Panes Keeps the Glass Clean While Painting and Is Then Cut Away.

take a sharp knife and cut the paper out, leaving a clean cut edge and clean glass. Often there is a misunderstanding among builders and others as to exactly what is meant in stating the hand of locks. The following rules, based on the adoptions of the Bureau of Standards and the manufacturers of building hardware, make this clear. The hand of a lock is determined from the outside of the door to which it is applied. In the case of a cupboard or closet door or bookcase, the outside is the room side. If standing outside of a door the butts are on the right, the door requires a right hand lock; if on the left, a left hand lock. If standing outside the door opens from you, it takes a lock with a regular bevel latch bolt; if opening toward you, it takes lock with a reverse bevel latch.

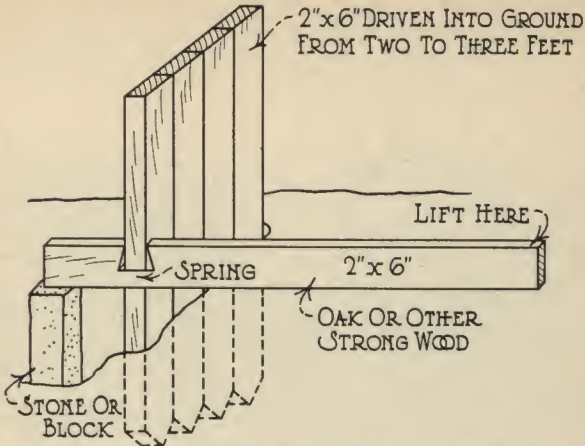
J. PAUL PORTEOUS, 235 W. Moody Ave., New Castle, Pa.

Pulling Planks Driven in Ground

WHEN planks that have been driven into the ground have to be pulled, it can be done quite easily by the method shown in the sketch. I worked this out on a job where two rows of planks had been driven to keep water from a shallow creek from interfering with work. After the job was finished the planks were needed whole for other use.

I simply cut a notch, in a piece of 2 by 6 hardwood, large enough to fit around the plank. Placing the end of the

hardwood piece on a block or stone, and lifting on the long end, springs the hardwood piece so that it clamps the plank.



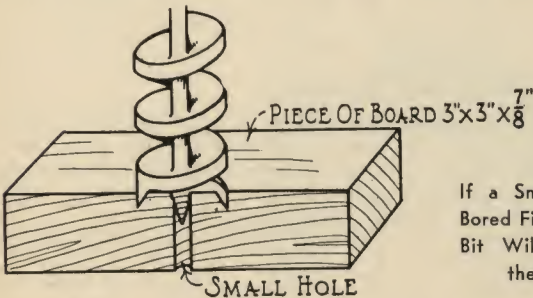
The Spring in the Pulling Lever Clamps the Plank Firmly.

If the hardwood piece is eight to ten feet long there is sufficient leverage to raise the planks easily.

J. A. CICHORACKI, 18305 St. Louis Ave., Detroit, Mich.

To Bore Without Splitting

I HAVE found that many carpenters can not bore a hole, say one inch in diameter, through a small piece of board, say three by three by $\frac{7}{8}$ inches, without splitting it, unless they put it in a vise. It can be done quite easily. First drill a hole through the block with a bit that does not have



If a Small Hole Is Bored First the Large Bit Will Not Split the Board.

a screw on it and is about half the size of the screw on the larger bit. Then proceed with the larger bit. Of you can make the first hole just large enough for the screw threads of the larger bit to hold on its wall.

E. W. DEHART, 1230 Kirkman Place, Union, N. J.

Applying Roofing Cement

I ALWAYS found it rather difficult to apply roofing cement till this idea struck me. Here is how I do it: I cut the can open, all around the top, and turn it over onto the roofing. I



Roofing Cement Is Easily Applied by Turning the Can Upside Down.

run the can along the edge of the roofing. This makes a neat job, spreads the cement evenly, and a can is just enough for one piece of roofing.

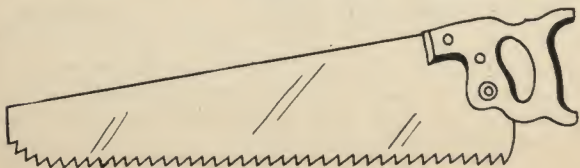
When I wish to apply the cement to part of a roll only, I turn the end of the roofing up, with the can against it, and so get the can right side up without spilling the cement.

I find it hard to apply roofing cement with a paddle and when it is the least bit cold you cannot use a brush either, so this method is a real help.—E. G. Jost, Hillsboro, Kan.

To Cut Through Flooring

TO simplify sawing through a floor, or board wall, file your saw as shown in the sketch. By rounding off point and filing teeth in the curved part it is possible to saw through a board without boring a hole and using a compass saw. This not only saves time but also makes a neater job.

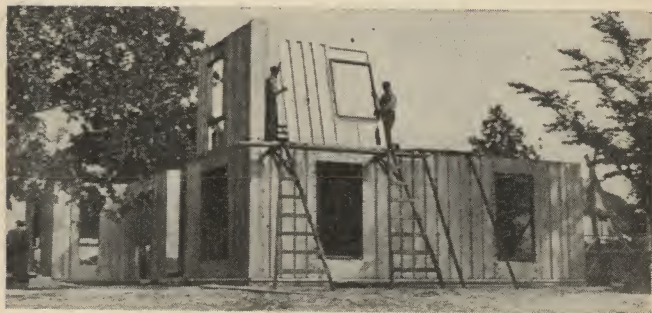
A. E. EVELAND, Balsam Lake, Wis.



This Saw, with the Point Rounded Will Cut Through a Floor Neatly and Quickly.

CLEVER TOOLS AND DEVICES

Kinks from Experience

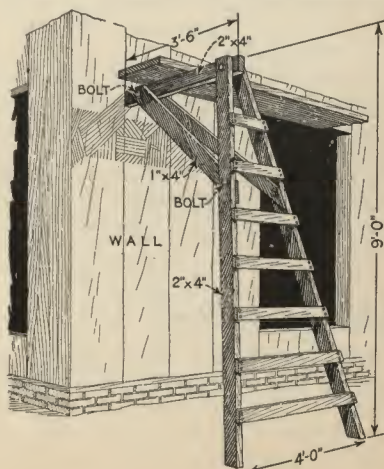


Using Scaffold Horse in Erecting Section of Cleveland Steel House.

High Scaffold Horse

IN the construction of the frameless steel house being built at Solon (Cleveland), Ohio, we are using two high scaffold horses for second-story work. These horses are built with three legs, two resting on the ground and one against the building. They make a firm, safe support for scaffold plank-ing, are light and easily moved and take up little space. Each horse is also a ladder. Built of hard pine or maple, these horses will last a lifetime.

T. R. SKOVE,
Solon, Ohio.

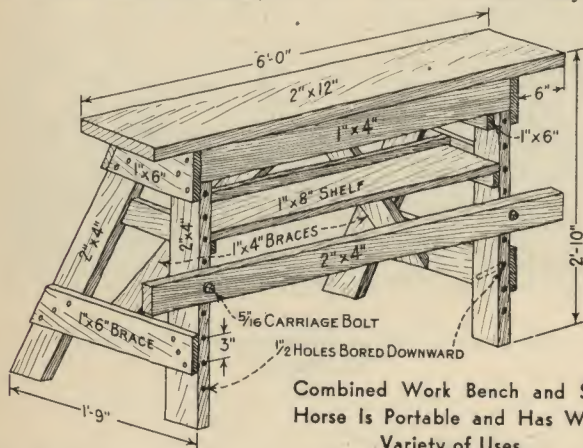


At Right—Construc-
tion Details of Scaf-
fold Horse Shown in
Use Above.

Portable Work Bench

THE work bench illustrated here fills the gap between the old fashion work bench and the saw horse. It is built out of materials found on every job and any carpenter can construct one in a few hours.

Proportions of the bench are such that materials can be placed upon it and planed without stooping. The front legs are vertical with an adjustable bar which will hold any size



Combined Work Bench and Saw Horse Is Portable and Has Wide Variety of Uses.

door from a 3x7 foot door to a small window sash, and what a joy it is to a workman to have his work up where he can get at it with ease and firmly held in place while planing or fitting butts. By placing a small portable vise on the end of the bench, materials can be held in place while working.

The greatest advantage that this bench offers is the fact that it is so very portable, one man can carry it from room to room and place it right near his work, thereby saving steps, which means saving time.

The bench is sturdy, large enough to do all the necessary work yet not so large but what it can be taken into a small room and still leave enough floor space for the mechanic to move about.

Every contractor would find that several such benches on a job while trimming would mean a saving of time for his men and it would also result in better workmanship.

W. E. DURBAHN, Highland Park, Ill.

Ladder Tool Rack

THREE-QUARTER inch holes bored along the outer edge of the top step of a step ladder will hold screw-drivers, pliers and other small tools in place and prevent them from falling to the floor while the ladder is being moved. On the extreme edges of the top step, I also cut square notches, large enough

for the handle of a claw hammer and a monkey wrench to slip in. These two tools are kept in these notches by a doubled piece of tin nailed across the opening. This tin cleat is provided with an inch slot cut at the fold, into which slips a putty knife on one end and a key hole saw on the other. Rough moving, by sliding or pulling, the step ladder across the floor will not jar any of these tools loose or cause them to fall to the floor. All of the tools are accessible for a ceiling



Much Climbing Up and Down Ladders Is Saved by
the Tool Rack Above.

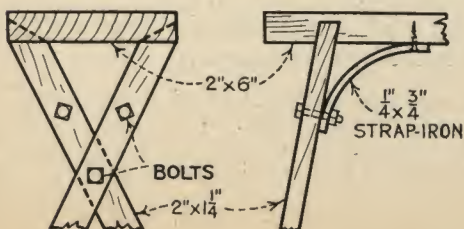
job. When you are through with any certain tool, you can slip it handily into its allotted hole with no danger of it rolling off.

RAY J. MARRAN, 3225 E. 28th St., Kansas City, Mo.

Just a Saw Horse

AM enclosing a sketch of a handy saw horse that is easy to make and easy to use. The details for its construction are shown. The principle involved in this saw horse is the freedom one has in sawing straight down or in a vertical position, such as sawing wallboard, plywood, etc., as the legs do not interfere.

AUSTIN WESSLIN, Barron, Wis.

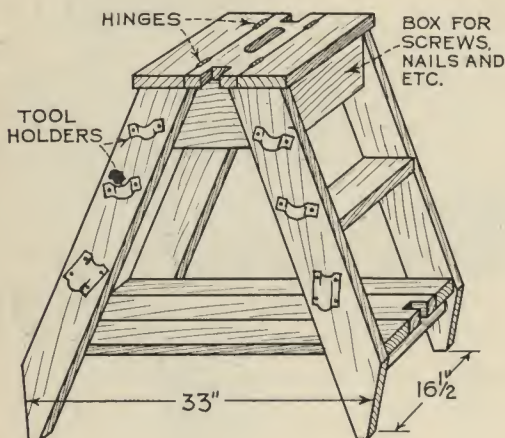


Legs of This Type
of Saw Horse Are
Conveniently Out
of Way.

For More Efficient Work

THE AMERICAN BUILDER has helped me with many valuable suggestions throughout the many years I have been reading it.

Enclosed is a little pencil sketch of a what-not that has helped us make good workmen more efficient. It will be found handy for many classes of work. It is easily made from material



Handy "What Not" Has Many Uses.

found on any job. (Usually scraps or broken pieces that are classed as kindling.) It is a double step ladder framed from 1x4 for side pieces and 1x6 treads, 16½ inches long; 9-inch rise and 6-inch run for side pieces.

The frame work under the top step when covered on the under side makes a handy place for screws, nails, etc. The top step is made of three pieces of 1x4x19 inches. The center piece is notched at each end, a slot large enough to enter the fingers in the center, and firmly nailed in place. The two outside pieces are hinged to the center piece, forming a cover to the till. The first tread is made of three pieces of 1x6x33 inches, extending between the two ladders and carried on 1x3 risers, thus forming a floor for tools. (Plane, saw, brace, hammer.)

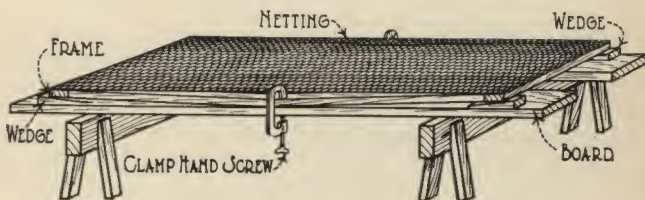
Four loops and two patches of leather nailed to side pieces form carriers for punch and screw driver. ⅝-inch and ⅜-inch bits, and two chisels. The notches in the first and last treads are used to hold sash and doors while fitting and mortising.

ASA E. SMITH, Winterset, Ia.

For Stretching Screen Wire

MY method of stretching screen wire on frames is to take a pair of common sawhorses set as far apart as needed for the work in hand. Then take two boards about one by six, or any width will answer, lay on the horses as far apart as the width of the frame to be screened. Lay the screen frame on the boards.

A clamp hand screw to fasten frame at the center on the one by six board is then needed. Take four wedges and drive them at the four corners of the frame until you get the proper tension for stretching the netting on the frames. Place the netting on the frame and nail each end to the frame. Release the wedges and the frame will spring back on the board with the netting stretched nicely.



By This Method It Is Possible to Stretch the Screen Wire
Onto a Single Frame Satisfactorily.

If the frames are about square they can be turned at right angles and proceed nailing as before. When the wedges are driven, it presses the frame to the board on the horses and also presses the horses to the floor and makes them quite secure, besides getting the tension of the frame to tighten the netting.

ALVA H. PIERSON.

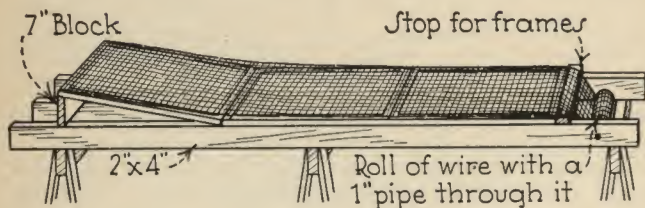
EDITOR'S NOTE—This item is reprinted from an issue of several years ago in response to the following letter:

"I noticed in several recent numbers of the *AMERICAN BUILDER* ways of stretching screen wire. These are all right but do not fit all cases. Many times a person has only one screen to make. I am sending a clipping from a back number of *AMERICAN BUILDER* for April, 1917. I have used Mr. Pierson's method quite frequently and probably will never use any other as this suits me first rate. This is not my idea and I do not want any credit for it, but I feel certain that if you will reprint it someone else may benefit by it just as I have."

EMERY G. SCHELLER, Vida, Montana.

Screen Wire Stretching

IN order to stretch screen wire tightly on screen frames I use the method illustrated in the sketch. Make a bench,



By Using This Method It Is an Easy Matter to Stretch the Screen Wire Tight on Two or Three Screens at a Time.

using two or three horses and long boards, long enough to lay two or three frames on it end to end. Eighteen feet is the length I usually use as this makes it possible to handle three screens at a time.

Place the screen frames on the bench, end to end. Tack the wire at one end of one of the end screens. Prop up the opposite end of the other end screen with a block seven inches high. Pull the slack out of the wire and tack it to the propped up end of the frame. Remove the prop and push the frame down onto the bench. This will pull the wire tight and it can be tacked in place on all the frames. The mouldings are then nailed in place and the job is finished.

FRANK WASHER, 376 Union Ave., Lynbrook, N. Y.

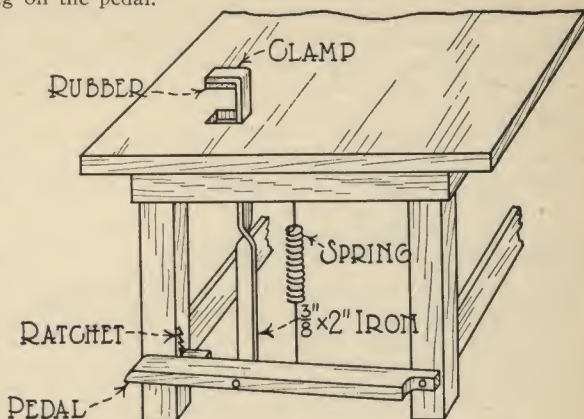
(Editor's Note: This method of stretching screen wire is merely a variation of a method previously described but is, perhaps, simpler and so deserves notice.)

A Useful Bench Clamp

THE sketch shows very plainly the most convenient and useful device I have ever had attached to my work bench. The object of this device is to clamp material firmly to the bench while working on it. A piece of $\frac{3}{8}$ by 2-inch iron is twisted at the middle and bent to a right angle at the top. A piece of rubber is glued to the under side of the right angle, as shown, to keep it from marring the wood.

The iron is passed through the bench which is mortised deeply enough to permit the right angle portion to sink below the surface when not in use. The lower end of the iron is attached to a pedal that swings up and down on a bolt at

the rear end. A spring is attached to the pedal and the bench to raise the clamp up when ratchet is released by stepping on the pedal.



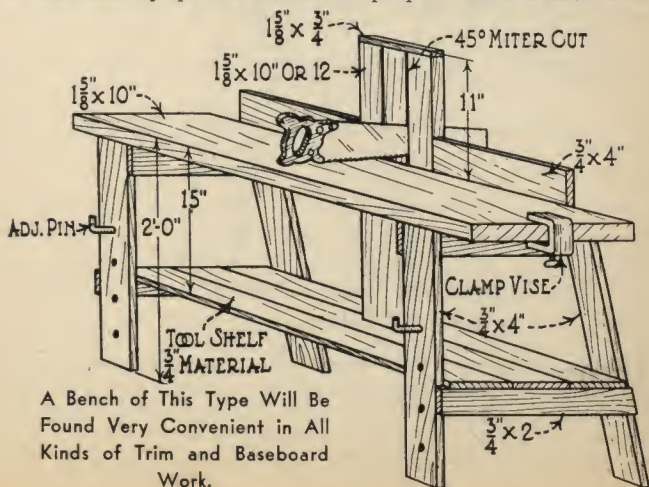
The Usefulness of a Work Bench Is Greatly Increased
by a Clamp Like This.

When material is placed under the clamp, the pedal is pressed down with the foot and the ratchet is thrown in gear, holding it firmly in place. The ratchet may be made from a piece of iron with notches filed in it or from an old rip saw.

STITES LILES, Forest, Miss.

A Convenient Finisher's Bench

SEVERAL years ago I made a finisher's bench like the one shown in the sketch, and have passed the idea along till it is now used by quite a number of people. Since I have never



A Bench of This Type Will Be
Found Very Convenient in All
Kinds of Trim and Baseboard
Work.

seen the idea in print, it might be good to pass along to the readers of the *AMERICAN BUILDER*.

Very little explanation is needed, as the sketch shows the construction of this bench clearly and its many uses will be apparent to anyone who does trim work. The clamp vise is an essential feature. There is ample room on the tool shelf for all necessary tools. The miter cuts are in the upright at the back and take the place of a miter box.

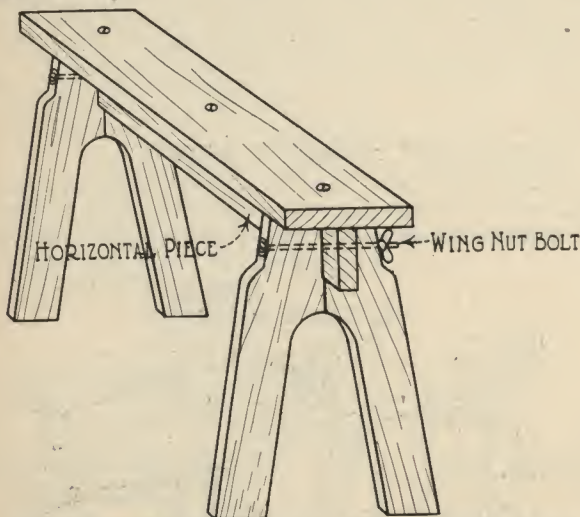
This bench has also been called a base jack because of its great usefulness in putting on baseboards.

SYLVESTER V. WEAVER, 1725 Arrow Ave., Indianapolis, Ind.

Handy Take-Down Saw Horse

THE sketch shows a carpenter's horse which is very handy for moving from one job to another. I have used it for more than 20 years and I thought it might be of interest to some of the young carpenters who may never have heard of it.

This horse is not difficult to make. The construction is quite plainly shown in the drawing. It consists of four pieces. The top is screwed onto the horizontal piece below and the legs are held securely in place by means of the two bolts with wing nuts which pass through the legs and the horizontal strip beneath the top.



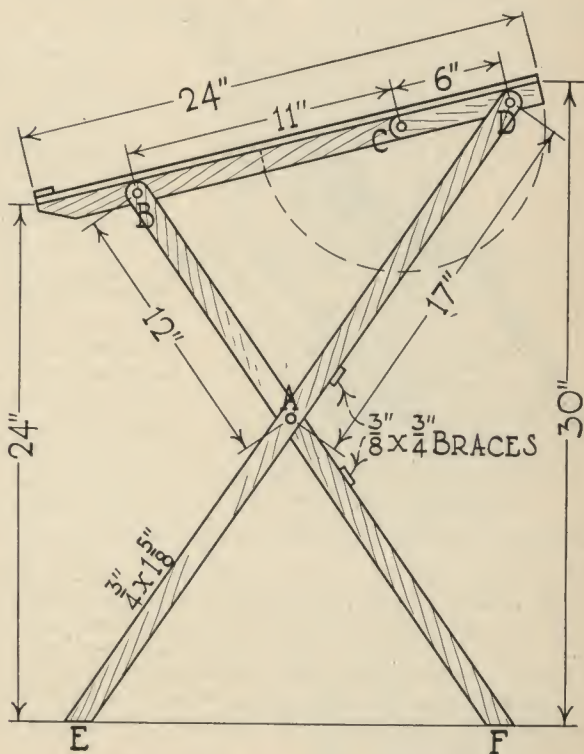
Just Unscrew the Wing Nuts and Take This Sawhorse Apart
When You Move to Another Job.

When ready to move from one job to another it is a simple matter to loosen the wing nuts, remove the bolts and take down the horse for moving. When taken down it is much easier to handle and transport than the ordinary sawhorse.

L. N. SNOW, 1076 Kossuth St., Bridgeport, Conn.

Convenient Portable Drawing Table

THE sketch shows a light, portable drawing table that I have found very popular among builders. It folds flat and so can be carried easily from the office to the job or wherever wanted. The top is made of three-ply panel, screwed securely



This Table Folds Flat and Can Be Carried Anywhere Quite Easily.

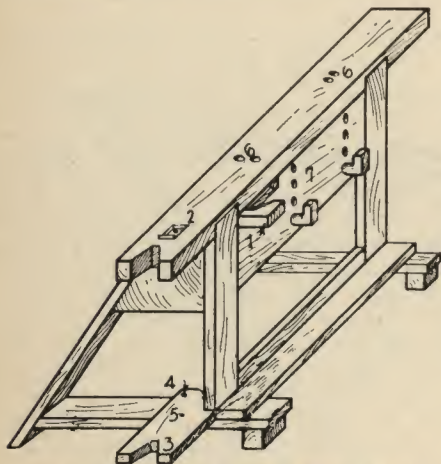
to two pieces of $\frac{3}{4}$ by $1\frac{5}{8}$ -inch pine. The legs are of the same size material. The "link" D-C is fastened at C to the top frame and at D to the leg with $\frac{1}{4}$ -inch carriage bolts.

The dimensions shown are suitable for use with a chair. In altering these dimensions to obtain other heights it is necessary to retain the relative dimensions: A-B plus B-C equals A-D plus D-C. The legs should be braced at the back, D-E being above A, and B-F below A, with $\frac{3}{8}$ by $\frac{3}{4}$ -inch material.

J. E. DEALY, 3644 W. Vernon Place, Los Angeles, Cal.

A Handy Work Bench

THE sketch shows a work bench which I find so convenient and helpful that I want to pass the idea along to others. The sketch is so plain that it hardly needs any explanation, but I will explain a few points which might not be readily understood.



Here Is a Type of Work Bench Which
Will Be Found Very Convenient.

against the leg of the bench which will form a firm stop for it.

The mortise (2) in the top of the bench is made just big enough to sink a small strap hinge in, so that it will be just below the surface when folded or let down, when not in use. Both wings of the hinge should be cut off, but a hole should be left to screw the one wing to the bottom of the mortise into which it fits. The other wing should be cut off so that when raised it extends about $\frac{1}{4}$ inch above the surface of the bench top to serve as a stop.

The movable piece (3) is simply fastened with a large screw at (4). A nail is inserted through a gimlet hole at (5) to hold it when in use. When not in use the nail is taken out and the piece slides around under the bench, out of the way.

The holes (6) in the top of the bench are to receive pins to hold boards on edge. A bottom board is placed at the lower edge of the 1 by 8 front board (7) and the back side left open, making a convenient place for tools.

The hook (1) is a piece of hard-wood fastened to the underside of the top, or to the back, with a large screw. When this hook is not in use it can be pushed around under the bench through the slot in the 1 by 8 as shown and will be entirely out of the way. It should be so placed that, when it is pulled out for use, the back of it will be

STITES LILES, Forest, Miss.



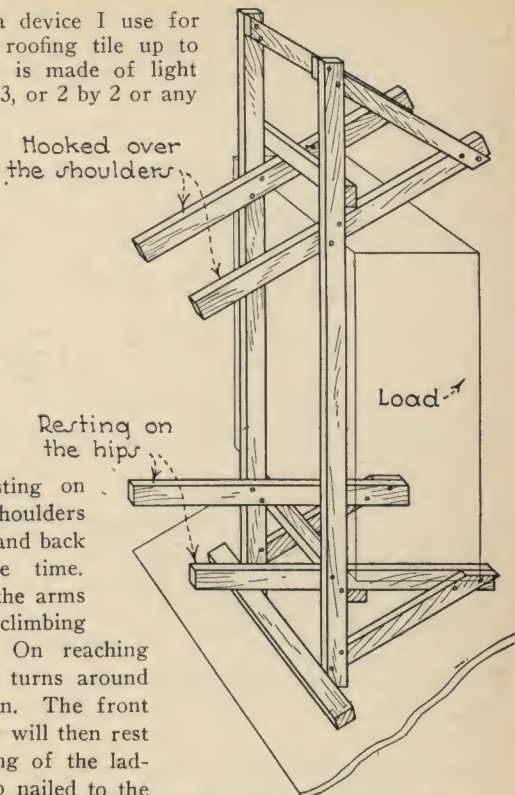
Convenient Tile Carrier

HERE is a device I use for carrying roofing tile up to the roof. It is made of light lumber, 1 by 3, or 2 by 2 or any material that is handy and is, at the same time, light enough and strong enough for the intended load.

The idea of this carrier is to have the weight of the load resting on both the shoulders and the hips and back at the same time. This leaves the arms free when climbing the ladder. On reaching the roof one turns around and sits down. The front of the carrier will then rest against a rung of the ladder or a strip nailed to the roof and the carrier can be unloaded without help.

The sketch shows how the pieces are put together and how the load is placed. This carrier can also be used for handling other materials, in other places.

PAUL NESS, 1036 S. Union Ave., Los Angeles, Cal.



A Carrier Like This Can Be Used to Take Roof Tile to the Roof and Can Be Unloaded Without Help.

To Paint Asphalt Roofing

IN painting soil pipes, roofing cement and built-up asphalt roofing with light colored house paints most people have trouble with the original black showing through the light paint. This can be avoided easily. I give the work a first coat of aluminum paint and, after it has dried, the surface can be painted with almost any color with complete success.

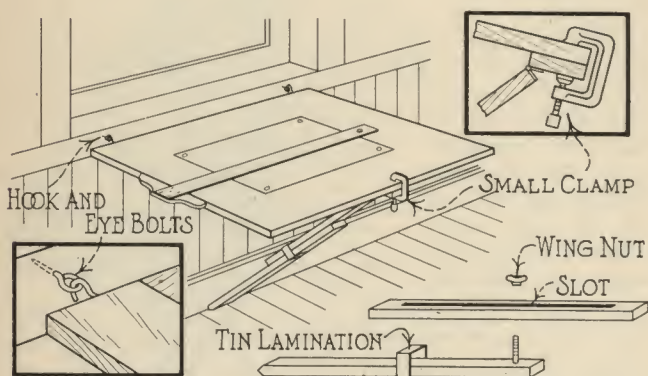
WM. H. HARTZLER, Marshallville, Ohio.

Handy Drafting Table

OCCASIONALLY a person needs a drafting table at home, or in the shop, but does not have room for a large table which is not in use regularly. A folding table can be made, as shown in the accompanying sketch, which will serve the purpose well and is entirely out of the way when not in use.

The sketch shows the construction of this board, which can be made of any desired dimensions. Both sides of the board can be used without disturbing the plans already on the other side, by simply unhooking it and turning it over.

OTTO FOIT, 2213 S. Gunderson Ave., Berwyn, Ill.

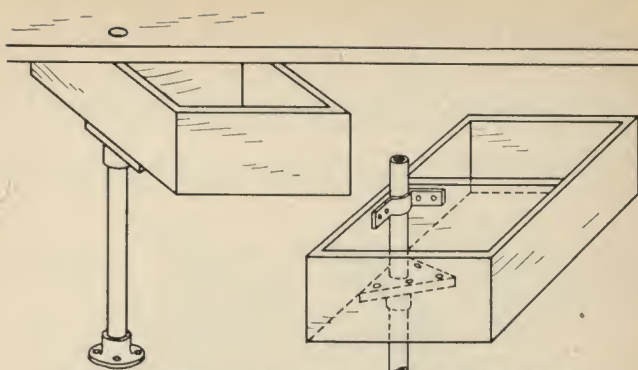


This Folding Drafting Table Is Handy in Either Home or Shop as It Is Out of the Way When Not in Use.

Swinging Bench Drawer

THE swinging type bench drawer shown in the sketch has a number of advantages over the ordinary sliding drawer. It is impossible to pull such a drawer out too far and spill the contents. It is possible to open and close it when one's hands are full of tools. It never sticks and, when opened, the entire drawer is brought out into the light where one can see all its contents.

Such a drawer is easily constructed and fitted to any work bench. The main thing is to use a sufficiently large plate below the drawer to support it and a pipe of sufficient diameter for the weight to be carried.



On the Work Bench, a Swinging Drawer Is Handier and More Practical Than a Sliding One.

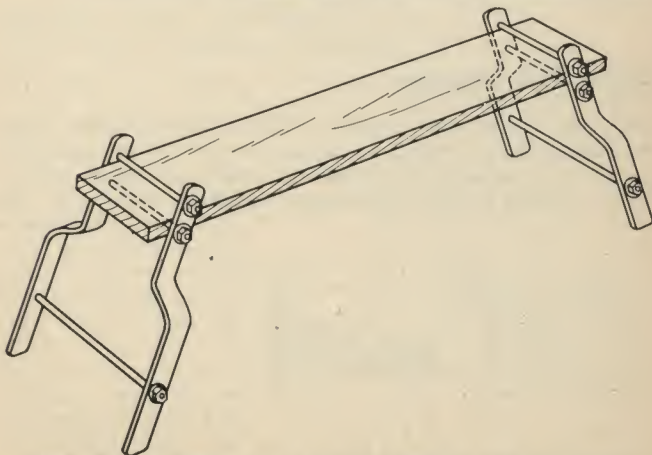
All details of the design are shown in the sketch, and dimensions can be made to suit the individual requirements.

CHARLES H. WILLEY, Hill Crest Acre, Penacock, N. H.

A Portable Knock-Down Bench

A PAIR of legs, such as those shown in the sketch, are easily made from heavy strap iron and a half dozen long bolts. When a board is inserted between the bolts, the legs clamp it securely and a handy bench, or low stage is formed. The board is as quickly removed and the legs are easily transported from place to place, taking little room in the truck.

CHARLES H. WILLEY, Hill Crest Acre, Penacock, N. H.

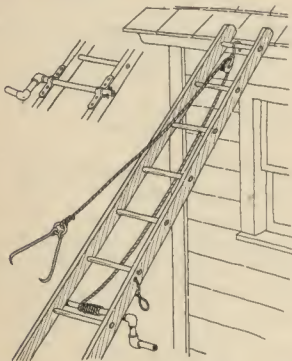


With These Self-Clamping Legs and a Board a Handy Bench Is Available Anywhere.

Ladder-Windlass

BUNDLES of shingles, rolls of roofing, etc., can be raised by an operator on the ground, and released conveniently by an assistant on the roof, using a home-made ladder-windlass as shown.

The windlass is a simple gaspipe assembly to provide the



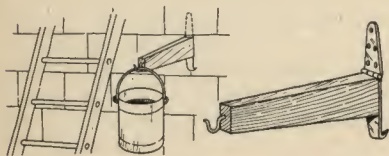
Gaspipe and Pulley Used with Ladder to Make a Windlass Useful, Especially on Roofing Jobs for Hoisting Shingles Roofing, etc.

crank and drum, and this is mounted on the underside of the ladder, at a convenient height, by means of strap iron bands. The rope from the windlass passes through a pulley attached to one of the upper rungs of the ladder, and returns, ending in a detachable sling for carrying the bundles of material. If one operates the windlass alone, a loop on the side of the ladder will be necessary to hold the crank stationary until the worker can climb up and remove the bundle.

G. E. HENDRICKSON, Argyle, Wisconsin.

Paint Pot Hanger

THE paint pot hanger shown will be found valuable when painting shingled houses. It consists of simple material: a piece of hard wood 8 inches long shaped as shown, with a hook in one end, and a strap hinge screwed to the other. The



Hinge Is Pushed Up Under Shingle.

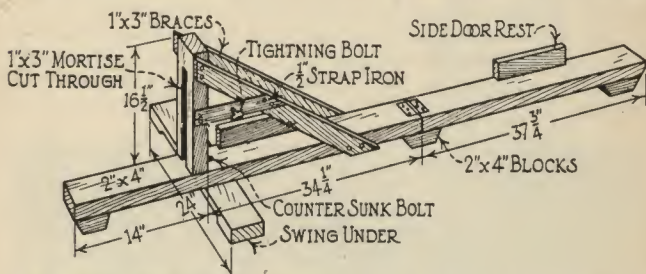
top end of the hinge is left in its normal condition, but the lower end is bent away from the stick at right angle and filed to a sharp point. To use, push one end beneath a shingle and drive the lower end into the side of the house slightly.

A. S. WURZ, JR., Rockyford, Alta., Can.

Folding Sash and Door Vise

NOT long ago I got tired of nailing up a new sash and door vise on every job so I worked out one that could be folded up and taken from job to job. I can recommend it to others as it is easily folded and moved and saves a lot of time.

The sketch shows just how this vise is made, even better than I could describe it. To use it, set it on the floor as



A Folding Sash and Door Vise That Can Be Taken from Job to Job Saves Time and Can Also Be Used for Cutting Wide Boards.

shown, place the sash or door between the two side braces, slip a shim between the tightening bolt and the door, and tighten the bolt. In place of the shim a block can be attached to the tightening bolt so that it will always be in place to prevent marring the door.

I also find this vise handy for holding wide boards to be cut on the mitre. For instance, mark the cut on a baseboard, then put it through the slot in the upright piece of the vise and cut close to the upright.

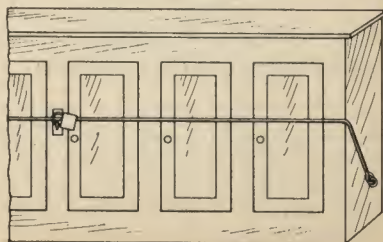
KENNETH DEMCHUK, Camp Lister, B. C., Canada.

One Lock Clothes Cabinet

INSTEAD of locking each locker in a clothes closet, our firm locks all six to each cabinet with a single lock. This does away with individual keys that are so easily lost. As shown in the illustration, a steel bar is bent and swivelled on an eyebolt at each end. A hasp is placed in the center and when the bar is lifted a padlock locks the whole cabinet.

H. MOORE, Hamilton, Ont.

To Right—Locking
Simplified by Bar.



A Daylight Workbench

THERE is no light as good as daylight for fine work at the bench. For such work, the bench illustrated will be found extremely handy. It can be moved about easily so that the light will strike the work at just the right angle.

The vise, or other tool, is attached to the top of a 36-inch, 4 by 4 post, with two small shelves just below for holding the hand tools. The post is mounted on a 3 by 3-foot platform, the central plank of which is 2 inches thick, and projects beyond the others about 18 inches. Angle braces for the post are nailed to this plank, and to the corners of the platform.



This Handy Bench Can Be Pushed into Any Position to Take Full Advantage of the Daylight.

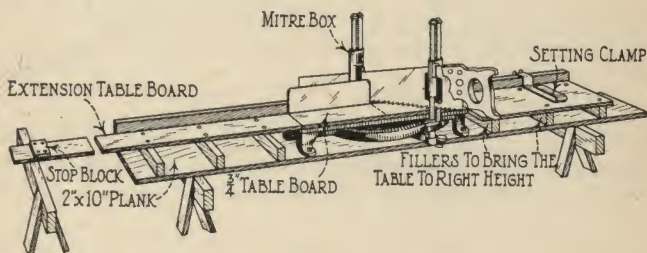
The end of the plank, and the four corners of the platform have small casters on which the bench is moved about. A padded seat is placed on the platform for the workman.

JOSEPH C. COYLE, Drawer B, Englewood, Colo.

Convenient Mitre Bench

I BUILT a mitre bench for my own use and have found it so handy that I believe others might be interested in it, too. The sketch shows just how this bench is built. I made it 10 feet long over-all. The long table makes it possible to cut any amount of short studs to perfect length by setting the "setting clamp" for the length wanted.

With this bench I use an ordinary hand saw for cutting base blocks, casing, moulding and similar material. The clamp can be used on either side of the mitre box. Having the $\frac{3}{4}$ -inch table board on the mitre box gives extra clearance for the saw.



This Mitre Bench Is Exceedingly Useful in Cutting Mouldings, Casings and Similar Material.

For cutting long stock, such as full length studs, I take off the short table board and put on an "extension table board" of any length needed. I nail a "stop block" on the end of this and measure from it to the mitre box for length. Even the poorest helper can cut to perfect length and perfectly square with this bench.

KENNETH DEMCHUK, Camp Lister, B. C., Canada.

To Use in Laying Floors

HERE is an idea for the carpenter who lays hardwood floors. Anyone who has done this work knows how tired and sore his knees get on such a job. This can be avoided, however. Have a patch pocket sewed onto each knee of your overalls, then slip a soft rubber sponge pad into each pocket. These pads can be bought at any 10 cent store and one pad, cut in two, is all you need.

J. M. SCUDDER,
Farmington, Ill.

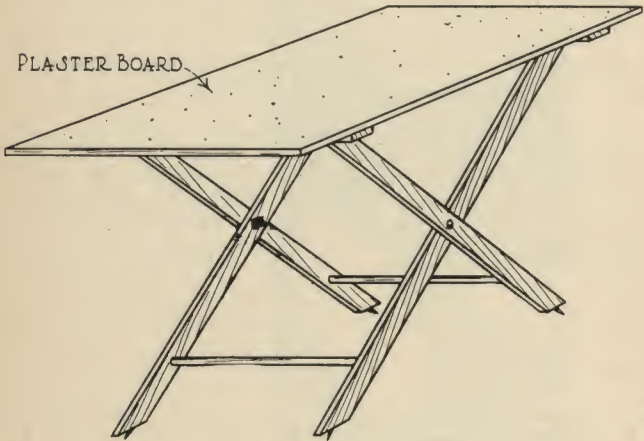


Sponge Rubber Pads Prevent
Sore Knees in Laying Floors.

Handy in Ceiling Work

HERE is a device I use for applying plaster board to ceilings, when I am working alone. It can be made from scrap material to fit any height ceiling. The sketch shows quite plainly how this device is made. The two pairs of legs are fastened together like scissors. The plaster board is placed on top. To raise it the legs are pulled together. To lower, they are pulled apart.

I find this much safer than applying the board by hand since it holds the board level across its entire width. With this device one man can do the work ordinarily done by three. If a nail is driven in each leg with the head filed off and allowed



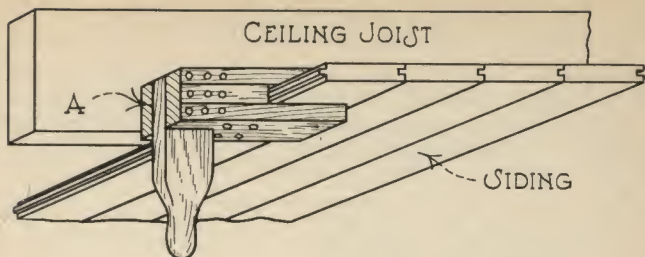
This Holds the Plaster Board Level During Application.

to protrude slightly there is no danger of the device slipping on the floor.

S. M. McGARRITY, JR., 102 N. Mt. Olive St., Siloam Springs, Ark.

Helps in Nailing Ceiling

IN applying car siding to ceilings I had a lot of difficulty in getting the tongues and grooves to engage properly, until I made the device illustrated in the sketch, a sort of ceiling hook. In using this hook, the hammer is used at the point A and not directly against the ceiling material. This avoids any damage to the material which would interfere with the fit of the next piece.



This Will Hold Ceiling Boards in Place While Nailing and Prevent Damage to the Tongue.

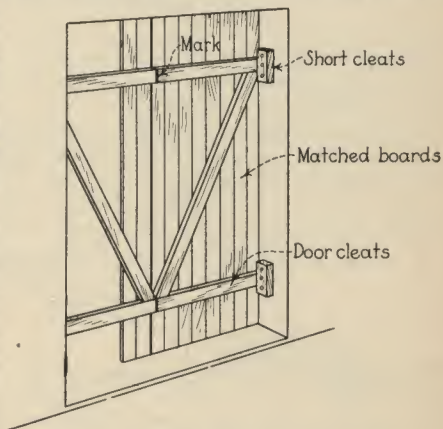
The perpendicular arm gives the workman the advantage of a more comfortable working position and enables him to see the work better as he is directly under it. The siding is easily driven tight with this hook.

BERT W. CULBERTSON, Jackson, Miss.

A One Man Door Building Job

IN building large swinging doors, such as are used on garages, barns, etc., I use the following method which makes this a one-man job: First I nail short cleats onto the inside of the jambs. Onto these I tack the one by six or one by four door cleats. Then I simply nail the upright, matched boards to these cleats all the way across.

Having marked the door cleats for the center opening, I rip one of the upright boards when I come to the mark. I then put on the hinges. Last of all I cut the cleats in the center, where they are marked and the doors are finished and hung. The two vertical cleats are nailed on last of all

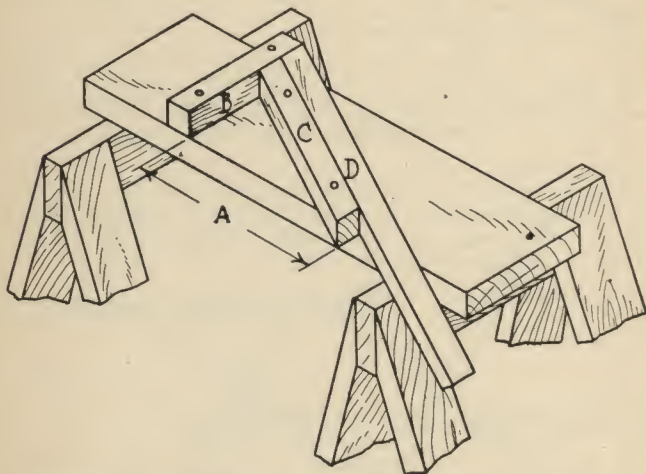


The Door Is Built in Place, the Hinges Attached and Then Sawed at the Opening.

C. J. GARDENER, Stony Creek, N. Y.

An Aid in Cutting Bridging

CUTTING bridging seems to be quite a problem for some workmen. Here is a method which is quick and easy. Secure a piece of board about four feet long, of the same material as the floor joists. Mark a space on it equal to the



A Form for Cutting Bridging Will Save Much Time and Assure a Good Fit on Every Piece.

distance between two floor joists (A) in the sketch. This is usually $14\frac{1}{2}$ inches but should be measured accurately. Nail the block (B) at one mark.

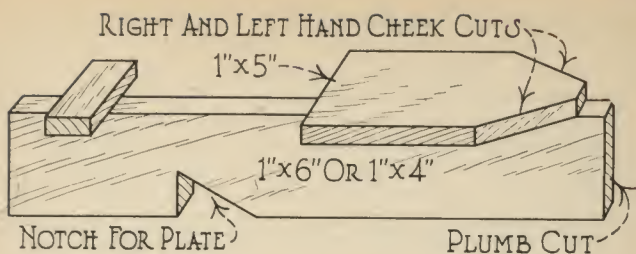
Next cut a piece of bridging material (C) to fit between the two marks on the board and nail as shown in the sketch. The bridging (D) can be pushed up against the block (B) and cut the same length as the pattern (C). The whole thing can be rested on two saw horses and used anywhere.

HUDSON R. HUFF, Cedar St., Livingston, N. J.

A Rafter Cutting Template

IN the November issue, Mr. Fagerstrom showed a template he uses for cutting rafters. It is quite good but has one fault. The ends are so much alike that if one was in a hurry he might make a mistake without noticing it. The template shown in the sketch is one I use and like better.

This template is very easy to make. The sketch shows just how it is put together. Use a one by four, or one by six, for the main piece, cutting the plumb cut on each end, and



Here Is a Template That Is Used for All Plumb and Cheek Cuts.

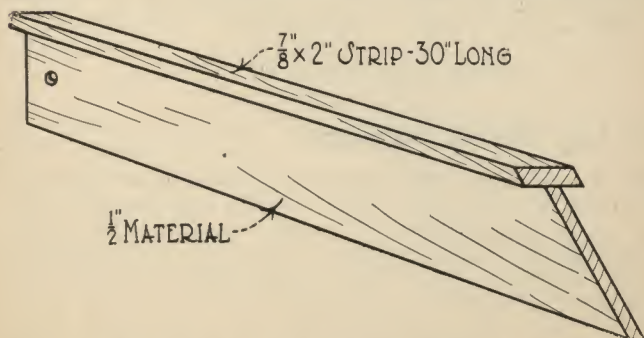
notch in the middle to fit the plate. I cut both right and left hand cheek cuts by the short piece of one by five which is centered on top and nailed to the one by six. In using this template I place on edge the number of pieces of each length needed and mark the lengths on the top edge, all at one time, with the framing square.

I. OLIVER PFEIFFER, 324 Dewey St., Bremen, Ind.

For Marking Rafter Cuts

THE sketch shows a handy pattern for cutting rafters and jack rafters which saves considerable time, does not move when being used as a bevel square does, and is more accurate because it is longer. After you have one cut marked with this pattern you turn the pattern and mark the other cut. It is made of a piece of $\frac{1}{2}$ -inch material with a strip of $\frac{7}{8}$ by 2-inch material along the top edge, and should be about 30 inches long.

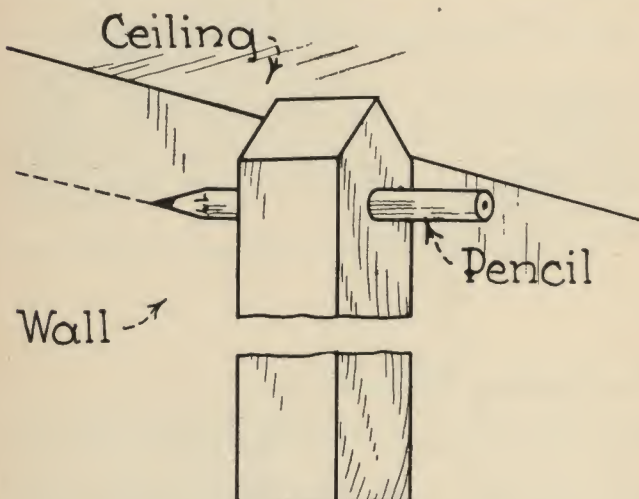
E. SCHWARTZ, 880 Duane St., Syracuse, N. Y.



Quite Simple But Very Handy for Marking Rafter Cuts Accurately and It Saves Time.

For Scribing Wallboard

TO save the inconvenience of standing on a ladder or horse to scribe wallboard to fit the ceiling, I use the device shown in the sketch and find it most convenient. Take a stick long enough to reach the ceiling easily when you are standing on the floor. Cut it to a ridge at the top as shown, making sure that the top is square with the sides. Bore a hole through the stick just large enough for a pencil to fit snugly. With the top of the stick against the ceiling and the point of the



Scribing Wall Board to Fit the Ceiling Is Much More Conveniently Done in This Manner.

pencil projecting slightly from the hole scribing is a simple matter.

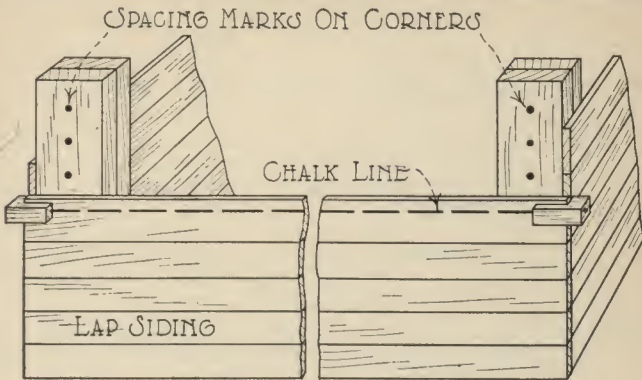
J. R. MCKAY, Crystal City, Texas.

To Lay Siding Straight

THE sketch shows the method I use in applying lap siding, a method which makes this a one-man job. I take a piece of one by one and make two of the cleat-like pieces shown in the sketch. I make a knot in each end of the chalk line after running it through these pieces, making it just a trifle less than the length of the building side.

When the two cleats are hooked over the corners of the building as shown, the line will be pulled tight and they will stay in place. It is a simple matter to slide the cleats up

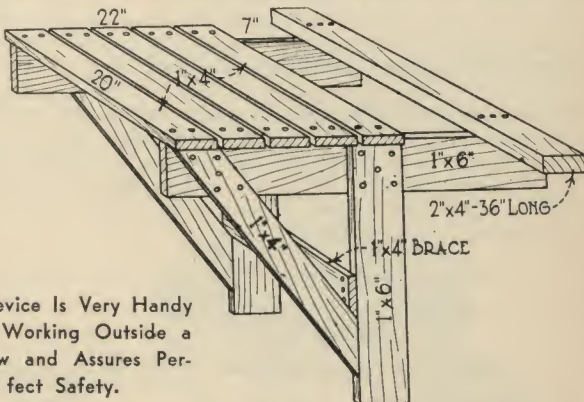
and down the corner boards as required and no nailing is necessary. BERT PARKER, Box 838, Weyburn, Sask., Canada.



Two Wooden Blocks and a Chalk Make It Possible for One Man to Get the Siding on Straight.

Window Jack Is Useful

HERE is a sketch of a window jack, as I call it, which I find very helpful in replacing broken window glass and nailing flashings on the tops of the outside window casings. I have often used two of them, where two windows were on the same level, for a scaffold by placing a plank from one to the other.



This Device Is Very Handy When Working Outside a Window and Assures Perfect Safety.

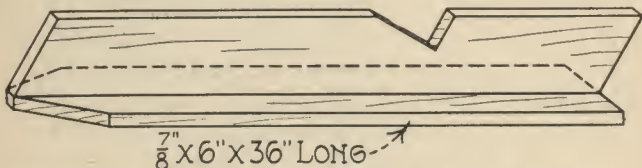
This jack is pushed out of the window from the inside and the two by four cross-piece remains inside, holding the jack very solidly. If the inside of the casing is finished, an old piece of inner tube can be nailed onto the ends of the two by four to protect the finishing against marring. I hope that others will find this as useful as I have.

H. J. BUEHLER, 1557 Sullivant Ave., Columbus, Ohio.

Another Rafter Pattern

IN the June issue a rafter pattern, by E. Schwartz, was illustrated. It is all right as far it goes, but it is not complete in that it can be used for the cutting of only one bevel. The sketch shows a rafter marking pattern I have used for some time. It is a time saver on either old or new work.

This pattern can be used for the heel cut on all common and jack rafters, as well as the top cut or point cut on both, as it is beveled to cut both right and left hand rafters. I use



This Pattern Can Be Used for Heel and Top Cuts on Both Right and Left Hand Jack Rafters to Save Time in Cutting.

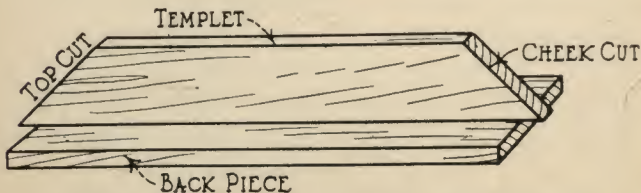
$\frac{7}{8}$ -inch material 36 inches long to make the pattern, for two by six rafters. Use straight material and make the form "T" shape as shown.

W. H. KEMPER, 49 Morgan Ave., Montgomery, Ala.

Template for Cutting Rafters

THE top and cheek cuts of jack rafters can be marked quickly and easily, saving much time, if a simple template is prepared. Such a template can be made of two pieces of board nailed together as shown in the sketch. One end is cut to correspond with the cheek cut, the other to correspond with the top cut.

NILS O. FAGERSTROM, 150 9th St., San Francisco, Cal.

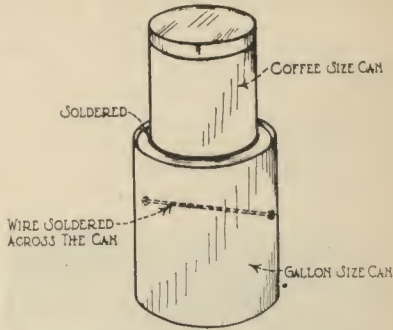


With This Template Top and Cheek Cuts Can Be Marked Quickly and Accurately.

Keeps Paint Brushes Soft

PAINT, varnish and shellac brushes, if properly taken care of, can be kept soft and clean indefinitely. They should be kept in an air-tight can, in turpentine or alcohol. A suitable can may be prepared as follows:

Procure a gallon size can with a friction top that is good and tight. Such a top is practically air-tight. Cut out the center of the top and solder onto it a can the size of a coffee can, as shown in the sketch. A stiff wire soldered across the can will keep the brushes upright. Clean the brushes well after using and keep them in this can with turpentine or alcohol and they will always be in good condition and ready for use.



This Container Keeps Brushes in Good Condition.

L. B. HARMON, 171 Central St., Winter Hill, Mass.

Handy Saw Oiler

I SAW a local carpenter using a saw oiler, the other day, and asked him where he got the idea. He said it was his own. It was so handy that I am passing it along. It consisted of a small round box, such as shoe polish comes in. A strip of felt was coiled into this box and then soaked with machine oil. The felt is thick enough to project a little above the edge of the box when the cover is removed.



Such a box can be carried in the pocket without getting oil on your clothes. It is always handy and convenient to use. Just remove the cover of the box and rub the felt over the saw.

EMERSON EASTERLING, 391 Liberty St., Ashland, Ore.

Adjustable Support for Lumber

A VERY satisfactory stand for supporting lumber or other light material, at various machines about the shop, is made as follows: Each end of the stand is formed by joining two 30-inch sections of three by four lumber in the shape of an inverted Tee. These are suitably braced. The upright members each have a one by three-inch groove in the inner face, for two $1\frac{1}{2}$ by 3-inch hardwood strips. These strips carry the eight by 16-inch roller of wood or metal. They are cross braced by a two by four near the top, and angle braced from this by a $\frac{1}{2}$ by $1\frac{1}{2}$ -inch steep strap.

The roller and inner frame are elevated or lowered to the



This Adjustable, Roller Stand Supports the End of Lumber Being Worked at the Machines.

desired height by a vertical crank or $\frac{3}{4}$ -inch rod, with the upper portion threaded to fit a hole tapped in a 1 by 2-inch steel bar. This bar is between the cross braces of the outer frame and is reduced at the top end to fit into a hole in the middle of the angle brace strap.

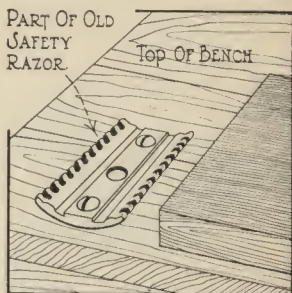
JOS. C. COYLE, Drawer B., Englewood, Colo.

Makes Good Movable Bench Stop

A GOOD sturdy small bench stop or block is often needed on jobs away from the bench where there is nothing but the usual small piece of wood to fall back on. Sometimes this is not so convenient, as often too heavy. Take the guard portion of an old safety razor and with two small screws fasten it anywhere on the improvised bench as shown. It

cannot be beat for just what is handy, needed and practical. Old razor blade parts are as common as old auto parts, and the piece is easily carried in the job tool box.

FRANK W. BENTLEY, JR.,
Missouri Valley, Iowa.

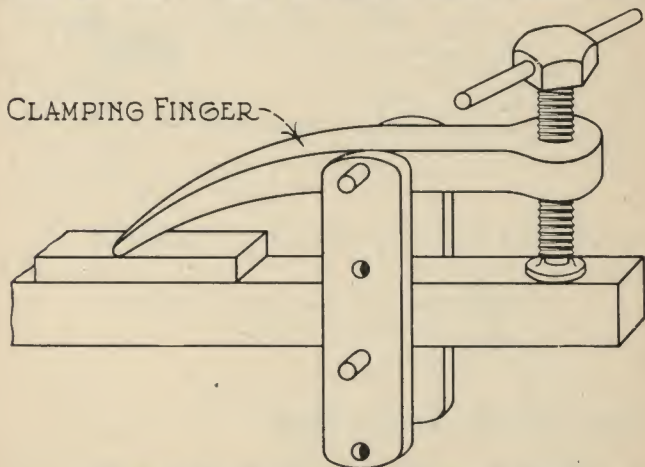


At Right—Bench Stop
from Old Razor.

A Wood Worker's Clamp

OFTEN a carpenter or wood worker has considerable use for a clamp to hold long pieces of wood together securely. Such a clamp can be easily made according to the design shown in the sketch. I call this a slip on clamp because it slips over the two pieces that are to be clamped together.

The clamping finger is drilled and tapped for a screw at the end and also drilled for the side pins. The upright side pieces are drilled for the side pins in several places so that



Long Pieces Are Easily Clamped Together by Means
of This Device.

the pins can be placed to give any desired width of opening. Workmen will find that clamps of this type will work satisfactorily on jobs that formerly offered a real problem.

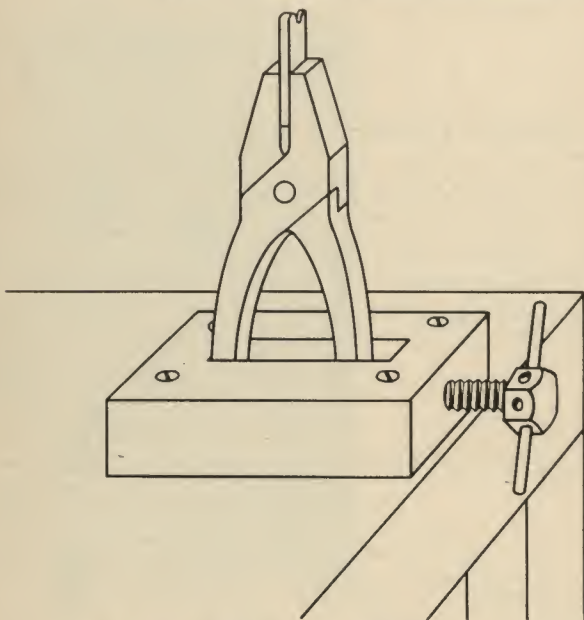
CHAS. H. WILLEY, Box 73, Concord, N. H.

Plier Vise for Small Work

IT is often necessary, when working at a bench, to hold a small, thin part for filing or other work and the ordinary bench vise is too large and awkward for such work. The sketch shows a simple bench attachment with which the ordinary pliers are used to handle this kind of small work.

The block can be made of either hardwood or iron. It is slotted to allow the pliers to be set into it vertically, as shown, and permit them to open sufficiently to receive the piece to be worked on. Rigid clamping is obtained by the screw fed against the handle of the pliers.

CHAS. H. WILLEY, Box 73, Concord, N. H.



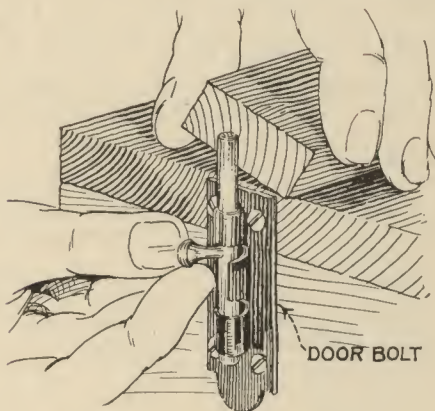
With This Device the Pliers Serve as a Vise for Holding Thin Pieces.

Door Bolt As Bench Stop

A BENCH stop, to hold one end of a board being dressed with a plane or smoothed with sandpaper, can be made from an ordinary sliding door bolt. The bolt is fastened to one end of the work bench with the bolt end of the steel casing flush with the top of the work bench as shown. When in use the bolt is raised to stand above the bench top where the end of the board being planed is butted against it and held by the pressure

of the plane dressing the lumber. When not in use, the bolt is lowered and remains below the top of the bench and out of the way of any work in progress.

RAY J. MARRAN, Kansas City, Mo.

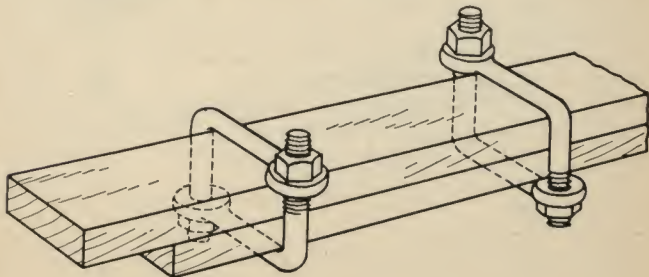


Door Bolt Serves as Bench Stop.

Handy for Clamping Parts

HANDY clamps can be made from common bolts by bending them at right angles, as shown in the sketch, flattening the ends and drilling holes in the flat ends. These can be used for all sorts of purposes such as clamping together bars, wire rope or bars and are especially handy for holding two parts together for drilling.

CHARLES H. WILLEY, Hill Crest Acre, Penacock, N. H.

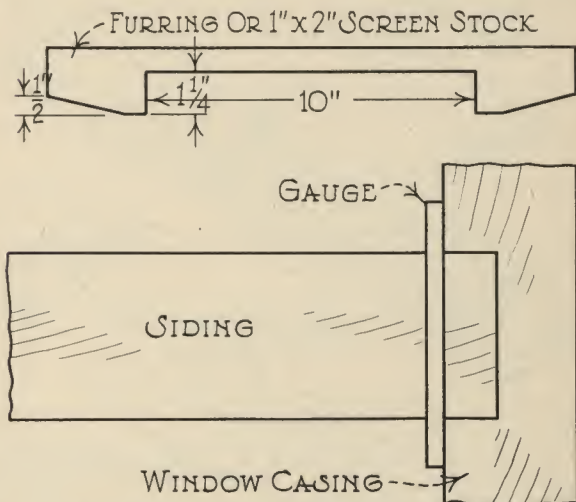


Bolts Bent, Flattened, and Drilled Like This Make Handy Parts Clamps.

A Handy Siding Gauge

FIND a gauge, made as shown in the sketch, most convenient when applying 10-inch bungalow siding. The cuts on the ends allow the gauge to lie flat on the siding, as the siding is pitched, and the upper corner strikes the lining board.

STURE BENGTSON, 23 Adelle Circuit, Worcester, Mass.

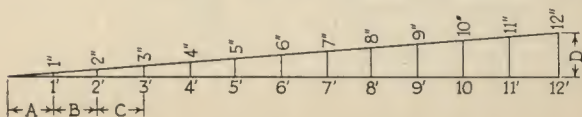


A Gauge Cut in This Way Is Handy in Applying
10-Inch Bungalow Siding.

Simple Drawing Scale

THE accompanying sketch shows a good substitute for an architectural drawing scale. It is a very satisfactory tool for a person drawing at home who does not possess a scale of this kind. Spaces A, B, C, D, etc., may be $\frac{1}{4}$ in., $\frac{1}{2}$ in., $\frac{3}{8}$ in., or any other scale (to the foot) which the draftsman wishes to use. All inches from one to twelve and feet up to twelve feet may be found on this scale. Dimensions are transferred from these spaces to the drawing with the dividers. If half inches or quarter inches are wanted, spaces B and C, D, etc., should be doubled or quadrupled in number.

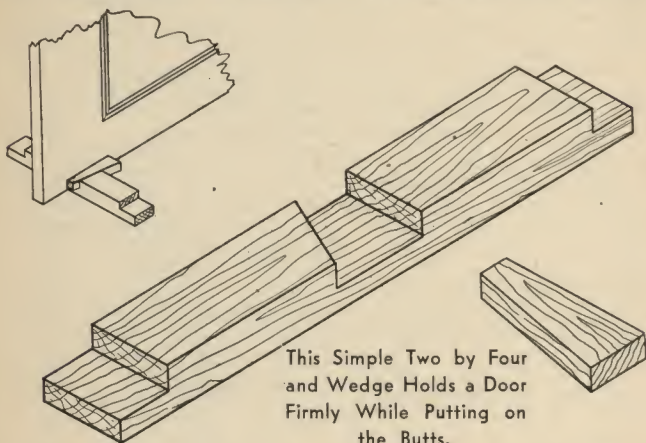
H. W. BOEKELOO, Kalamazoo, Mich.



Handy Improvised Scale for Reading Architectural Drawings.

It Holds Door Firmly

I AM sending a sketch of a door holder which, I find, holds a door more firmly to the regular horse with a "V" cut, when putting on butts, etc. The wedge must be left



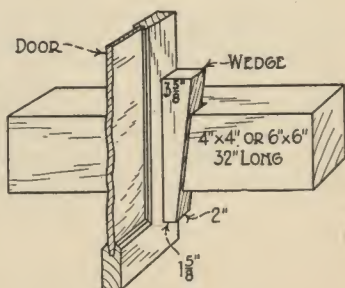
blunt on the small end so that it can be tapped out easily. The block is made from a piece of two by four. The notch in the two by four is square across the piece on one side and at an angle on the other side. The wedge is cut to fit this angle. The notches at each end of the two by four are simply intended to make it easier to nail the piece down, without using large nails.

E. W. LYSTER, Box 251, Newport, Vt.

Here's Another Door Clamp

I AM offering another door jack or clamp which is very simple but quite satisfactory, I find. This jack will take any door from $1\frac{1}{8}$ inch thick up to $2\frac{1}{4}$ inch or more. It is simply a piece of four by four or six by six 32 inches long with a slot cut into it about half way. The door is set into this slot with a wedge driven along side of it as shown in the sketch. This device is easily and quickly made and holds the door firmly while working, and without marring it.

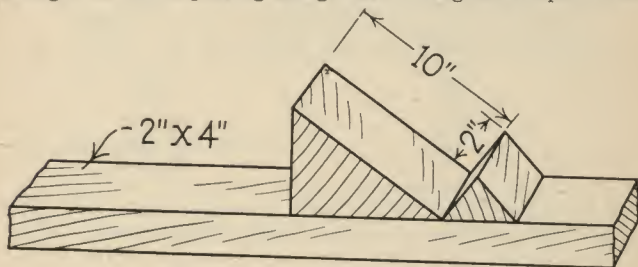
GEORGE PITMAN,
515 Andrews Ave.,
Kirkwood, Mo.



A Very Simple Device for
Holding a Door While
Working on It.

Jack for Cleaning Bricks

A FORM or jack, for holding brick when it is necessary to clean old mortar off them, is shown in the sketch, which is self-explanatory. It is made of a length of two by four and two blocks nailed onto it. I have used this jack for quite a while and find it very convenient. Since the idea was original with me it is probably not known to many and I thought it might be worth passing along. The triangular shaped blocks



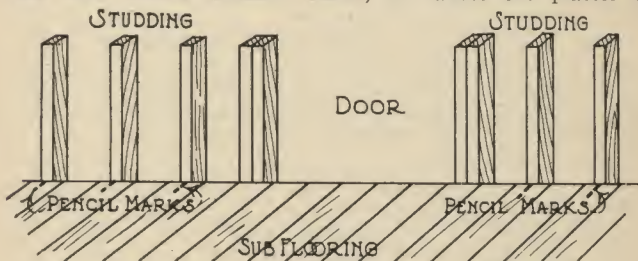
This Is Handy When You Have to Clean Old
Mortar Off of Bricks.

are also cut from two by four.

M. E. COUCH, 1610 Thayer Ave., Little Rock, Ark.

Nailing Base Board

WHEN it comes to nailing on base boards, some carpenters sound the plaster, with a hammer, to find the studding. This often leaves hammer marks, or causes the plaster to



A Mark on the Subflooring at the Center of Each Stud
Is a Guide in Nailing Base Board.

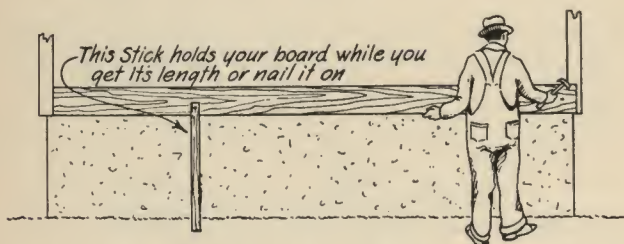
crack. Others measure 16 inches from one end and start nailing. If the studding happens to have been spaced from the other end, part or all of the nails miss the studs and the base board is not solidly nailed.

I find that if, before plastering, you take a pencil and mark the center of each stud on the subfloor, when you come to nail the base board you can place your nails properly and get a solid job without damage to the plaster.

CHAS. E. DEGAN, P. O. Box 153, Port Chester, N. Y.

When Working Alone

IT is sometimes necessary to put on a long trim board or other unwieldy piece when there is no one around to give you a hand. This can be done more easily if you will tack



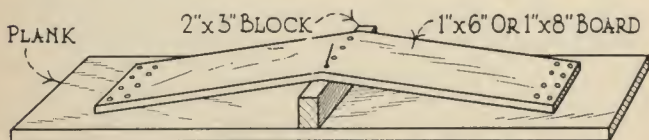
A Small Stick Tacked to the Center of a Long Piece of Trim Takes the Place of a Helper When Working Alone.

a stick onto the board, at about its center. Have this stick of a length very nearly the same as the height at which the board is to be nailed. The stick will hold the board up sufficiently so you can do the nailing.

WERNER GRAATZ, General Delivery, Tuckahoe, N. Y.

Strengthening Scaffold Planks

I HAVE learned, from experience, a good way of strengthening scaffold planks that may be too weak for safety. Nail a 2 x 3-inch block at the center of the plank, across its width. Then take a piece of 1 x 6, or 1 x 8-inch board a little shorter than the length of the plank, bend it over the block and nail to the block and plank as shown in the sketch. In



A Weak Scaffold Plank Braced Like This Is Perfectly Safe But Should Be Tested Before Using.

use, this brace is on the under side of the plank, which is used in the reverse of the position shown in the sketch. After bracing, the strength of the plank can be tested by placing a low support under it at each end, and jumping on it.

N. O. FAGERSTROM, 150 Ninth St., San Francisco, Cal.

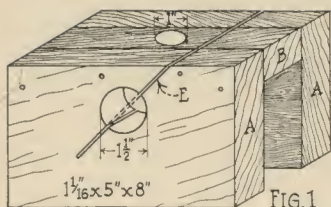


FIG.1

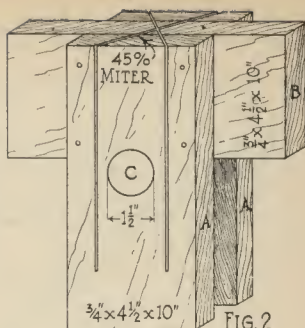


FIG.2

Handy Miter Box

A HANDY miter box for cutting the moulding on head casing and side casings is made of two pieces $1\frac{1}{8} \times 5 \times 8$ inches (A), and one piece (B) $1\frac{1}{8} \times 1\frac{1}{2}$ inches nailed between and flush on top, with $1\frac{1}{2}$ inch hole (C) bored through the three pieces and a 1-inch hole bored down through the piece B. These two holes allow you to see your mark. E represents the saw cut square across the top and at a 45 degree angle down. By reversing the block, you have a right or left hand cut.

Figure 2 shows another box made for cutting a miter on a moulded base. It is made of two pieces of $\frac{3}{4} \times 4\frac{1}{2} \times 10$ inch oak (A) and one piece of $\frac{3}{4} \times 4\frac{1}{2} \times 10$ inch W. P. (B) nailed together as shown. A $1\frac{1}{2}$ inch hole (C) is bored, as shown, so you can see your mark when this is placed on top of the base board.

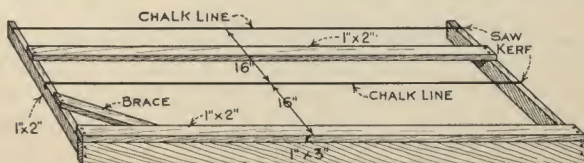
E. O. BALL, Milan, Mich.

Jig Helps Line Up Nails

A FEW minutes spent in building a frame like the drawing I am enclosing will pay for itself many times over when applying plaster board, wall board or plywood. It not only takes the guesswork out of where to drive the nails so they will hit studding, but will also line them up and make a much neater job.

I build a frame long enough to take the longest length of wall board, and then it can be used on all shorter lengths also. Simply chalk the lines, shove the frame against one edge of the board and snap the line. Lines can easily be changed for two foot (24") centers.

CHARLES W. MAUGER, Ulster, Pa.

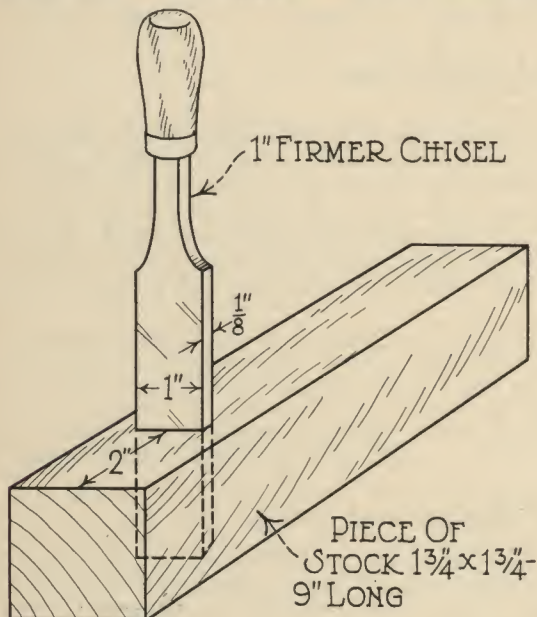


For Use with Wall Board. Lines Up Nails.

Practical Paint Scraper

A THOROUGHLY practical and convenient scraper for paint or glue can be made with a block of wood and an old firmer chisel, as shown in the sketch. A hole is cut through the block for the chisel to pass through. This hole is slightly enlarged at the bottom so that the paint or shavings will not clog up around the chisel and keep it from scraping properly. The chisel point can be put in front for use on hard materials such as enamel.

WILLIAM WEITLAUF, JR., 1914 Kinney Ave., Cincinnati, Ohio.



A Simple Scraper Made of a Block of Wood and an Old Chisel Is an Exceedingly Handy Tool.

Handy Sandpaper Block

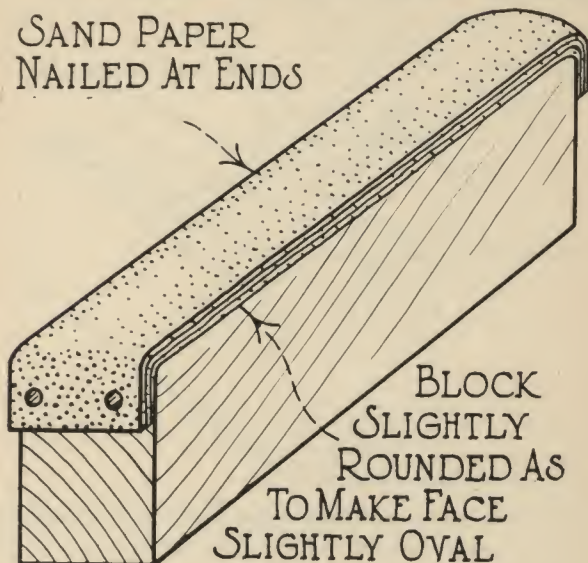
IN my work I am constantly looking for and working out short cuts and better ways of working. In this line the sandpaper block shown in the sketch has proved most convenient. I cut the sheet of sandpaper in two or more strips, lengthwise. I take a block of wood, a little shorter than these strips and the same width, and round off one side of it, slightly, both ways.

I nail about a dozen strips of sandpaper to the rounded surface of this block, driving the nails into the end of the

block. When one sheet wears out I simply tear it off and go right ahead with the work.

A. T. MONTGOMERY, 1011 N. Yale Ave., Wichita, Kan.

SAND PAPER NAILED AT ENDS



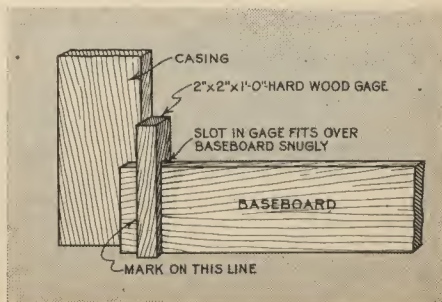
BLOCK
SLIGHTLY
ROUNDED AS
TO MAKE FACE
SLIGHTLY OVAL

This Block with Strips of Sandpaper Nailed to a Rounded Surface Saves Time and Also Sandpaper.

Baseboard Gauge Makes Good Fit

PLACE baseboard so it passes the edge of casing as shown in sketch. Slide gauge over baseboard, pushing up snugly against casing and mark as indicated on drawing. A perfect fit is obtained without block plane, etc. I have used this idea with a lot of satisfaction, and find it a real time saver.

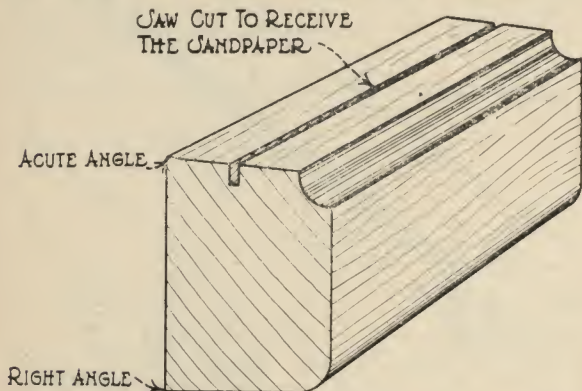
L. H. SHERMAN, Dayton, Wyo.



Baseboard Gauge
Used for Getting a
Good Fit Quickly.

Convenient Sanding Block

THE sanding of mouldings, convex or concave surfaces and acute angles, is made much easier by providing a soft wood block like the one shown in the sketch. The block can, of course, be made any convenient size, but one a little longer than the width of a sheet of sandpaper is about right.



A Block Like This Makes It Easy to Sandpaper the Odd Shapes and Corners that Are Hard to Get at.

The block is smaller at one end than at the other. One edge is cut at a right angle, another at an acute angle, the third is rounded to fit into concave surfaces and the fourth is cut out to fit over convex surfaces. A saw cut is made along one side as indicated to receive the sandpaper.

Fold the edges of the sandpaper to fit into the slot and to lie fairly snug around the block toward the small end. Then slide the paper toward the large end and it will tighten. I use a half sheet of sandpaper at a time and make the block a trifle longer than the width of the sandpaper.

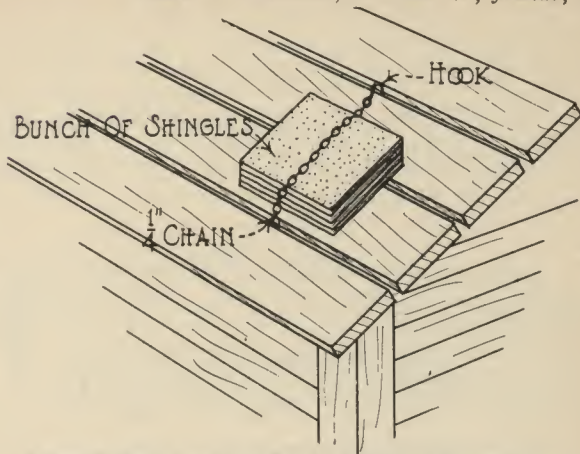
W. G. GRUBB, 1118 8th St., Woodward, Okla.

It Helps When Shingling

WHEN shingling, I have often had trouble keeping an open bundle of shingles from being blown away by the wind. One day I thought of a way to hold the shingles without interfering with the work. I took a piece of chain about four or five feet long, with a hook on one end, hooked it back of one of the roof boards and dropped the chain over the bunch of shingles, letting the end hang down through a crack between the roof boards. This held the shingles in place even in a strong wind and still permitted me to pull

the shingles out as needed without delaying the work.

ROBERT G. SHOEPKE, 255 Oak St., Juneau, Wis.



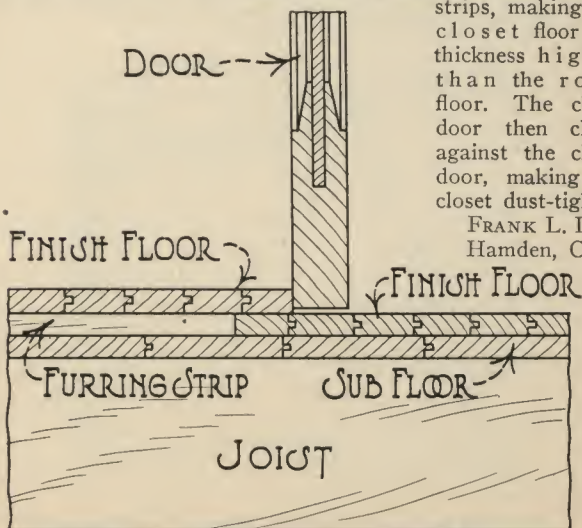
A Simple Way to Keep a Bunch of Shingles from Blowing Away in a Strong Wind.

Makes Closets Dust-Tight

THE sketch shows an idea which helps to make a house more desirable and so easier to rent or sell. Before applying the finish floor in all closets, I nail furring strips at every joist, over the sub-floor. I then apply the finish floor over these furring

strips, making the closet floor one thickness higher than the room floor. The closet door then closes against the closet door, making the closet dust-tight.

FRANK L. LIZA,
Hamden, Conn.

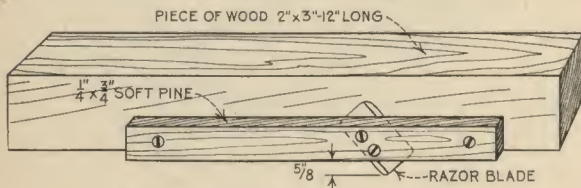


A Raised Floor in the Closet Keeps Out the Dust.

Tool for Cutting Wall Board

THE enclosed sketch shows a tool I have used a lot for cutting insulating boards such a Masonite, Celotex, Insulite, Firtex and so forth, as well as light wall boards. The tool is pushed along the line to be cut, like a plane, and makes a clean straight cut. It is much faster than sawing and doesn't leave a ragged edge as a saw does. I recently trimmed one end and one side of 75 sheets of Masonite 4 feet x 10 feet with a single blade.

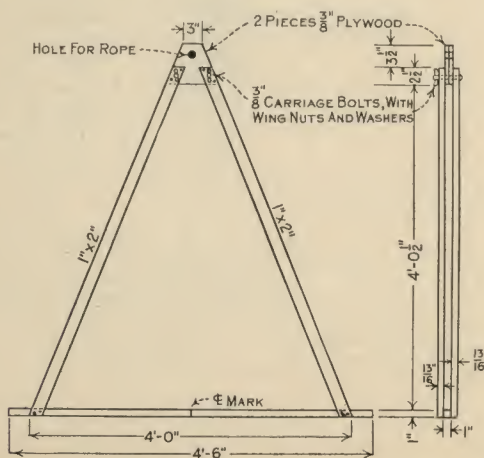
J. O. STRADLING, Mesa, Ariz.



Cuts Wallboard Rapidly and Straight.

Sling for Hoisting Wall Board

WHEN insulating boards, plaster boards, or any kind of wall boards have to be taken to upper stories of a building, and cannot be carried up, on account of turns in the stairs, or for other reasons, a sling such as shown in the sketch is very useful in hoisting them by rope and tackle.



This Sling Proves Very Useful in Hoisting Large Pieces of Wall Board to Difficult Locations.

The dimensions given in the sketch are made to suit boards $\frac{7}{8}$ -inch thick, two at a time or one $\frac{7}{8}$ -inch thick. For other thicknesses, the sling should be made to suit.

The board is slipped into the sling, the center of the board at the center mark, so the load balances. The wing nuts are then tightened up, which clamps the board fast, and the whole thing is then hoisted up.

With this sling I hoisted sheets of insulating board 4 x 11 ft. x $\frac{7}{8}$ -inch thick, up to and into a second story window, single handed, without damaging the boards in any way.

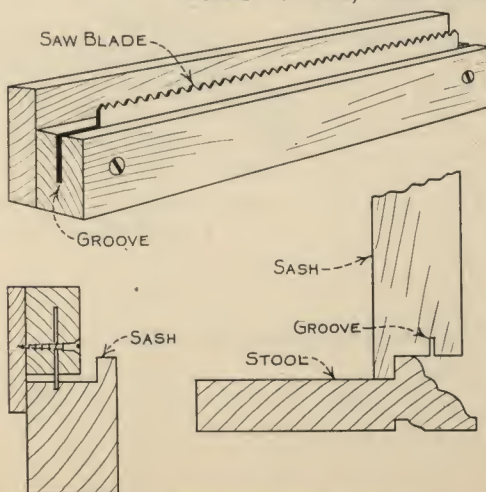
H. N. ROWLAND, Parkerford, Pa.

Hand Tool Cuts Grooves

CUTTING the water drip groove on the bottom edges of casement and similar sash is a mean job. This simple hand tool is quickly made and does this job neatly. It consists of two hardwood blocks 7 inches long. One is $\frac{3}{4}$ x1 $\frac{1}{4}$ inches in section with a saw kerf 1-inch deep cut in the $\frac{3}{4}$ -inch edge about $\frac{1}{4}$ inch from one side. The other block is $\frac{1}{4}$ x1 $\frac{3}{4}$ inches in section and is set vertically to act as a guide. Two screw holes are made in the saw part so positioned as to be just outside the ends of the cutting blade.

For this take a 5-inch length of old compass saw blade. Insert so as to project about $\frac{1}{8}$ inch, then tighten the wood screws. It is used like a plane with the guide sliding along the outside of the sash and the blade cutting a narrow groove $\frac{1}{4}$ inch in. In case an old compass blade is not available, a piece of thick hacksaw blade can be used. When this is the case, it is possible to have at least one end with a hole through it so one screw can be so positioned as to pass through this.

MORRIS A. HALL, White Plains, N. Y.



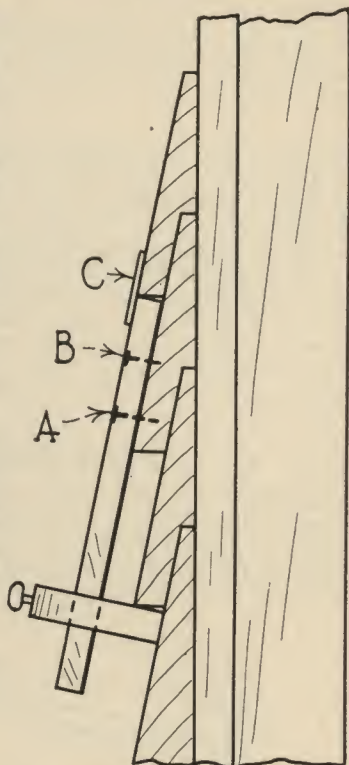
Details for Simple Groove Cutter.

For Laying Lap Siding

THE sketch shows a simple gauge which I find handy in laying drop siding. It is easily made and makes the laying of drop siding a one-man job. I made my gauge from a cheap working gauge which I bought at the five and ten cent store. I drove two short nails through the beam. The point of the nail "A" protrudes $\frac{1}{4}$ in. and the point of the nail "B" a little less. A short piece of brass or steel is fastened to the end of the beam at "C" to prevent the siding from slipping off.

After the gauge is set for the required exposure of siding, the head of the gauge is placed under the row already laid and a slight tap of the hammer drives the gauge onto the last row. The marks left by the nail points are small and not noticeable on the finished work. The new piece of siding rests on the end of the beam while you nail it in place.

C. J. GARDNER,
Stony Creek, N. Y.

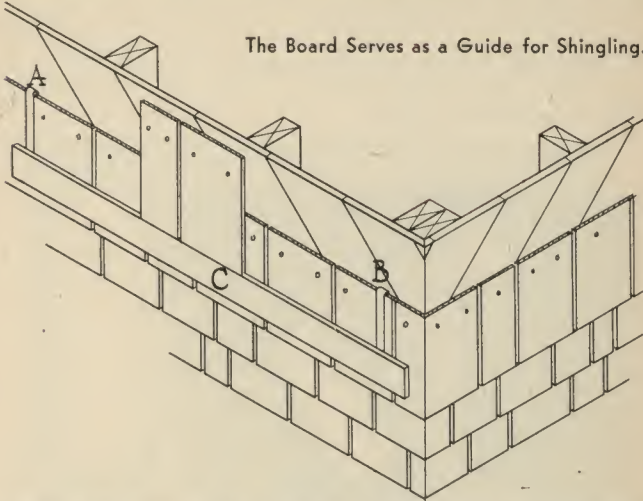


A Cheap Marking Gauge Used in This Way Makes a One-Man Job of Laying Lap Siding.

This Simplifies Laying Shingles

SHINGLE laying is made easy by the use of the device shown in the sketch. This device can be made in a few minutes. All that is required is a straight board, of any size, though a light piece is easiest to handle, and two pieces of strap iron. The pieces of strap iron are bent at one end in the form of a hook. The opposite end is fastened at right angles to the board.

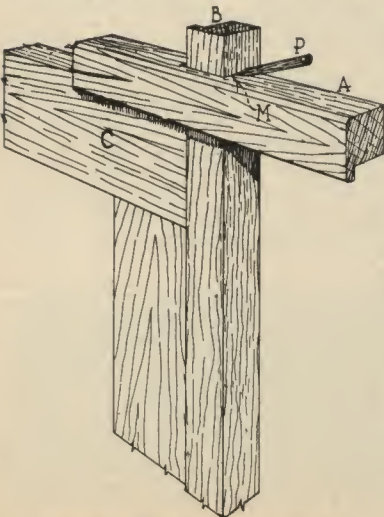
The hooked ends of the pieces of strap iron are hooked over the last row of shingles. Their length is such that the upper edge of the board is the exact distance from the butts



of the last row as the exposure desired. The shingles are simply laid on the board and nailed. The exposure can be varied by varying the length of the hooks.

WILLIAM FOIT, 2213 S. Gunderson Ave., Berwyn, Ill.

Handy Backband Marker



Notched Backband as a Marker.

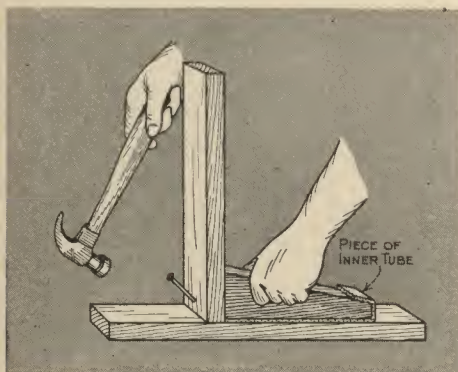
TO mark the length at which to miter backbands around door and window casings, use a piece of backband, A in the sketch, about eight inches long, with a notch $1\frac{1}{2}$ inches wide and $\frac{3}{4}$ inch deep, as shown. Lay this piece upon the head casing C in the position of the top member, with the notch around the end of the side member B and mark at M, as shown by the pencil P. The length of the top member is easily marked by placing it upside down over the side members.

RUDY SENGEL,
Goshen, Ind.

Holds Pieces in Place

STANDARD and other upright pieces of wood that have to be toenailed to the plate have a strong tendency to slip out of place when they are being nailed. To prevent this, the accompanying rubber bottom wedge will be a great help. Simply cut a wedge from 2-inch stock and sole it with inner tubing. The soft rubber will not and cannot move back so it will keep the material squarely in place.

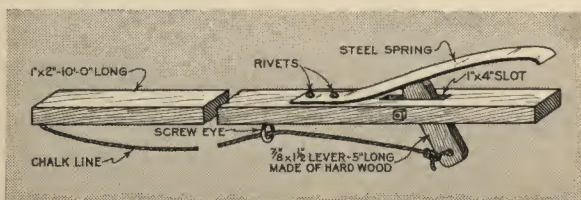
A. S. WURZ, JR., Rockyford, Alta., Can.



Rubber Band
Over Block Keeps
It from Slipping.

Picks Up Spreaders

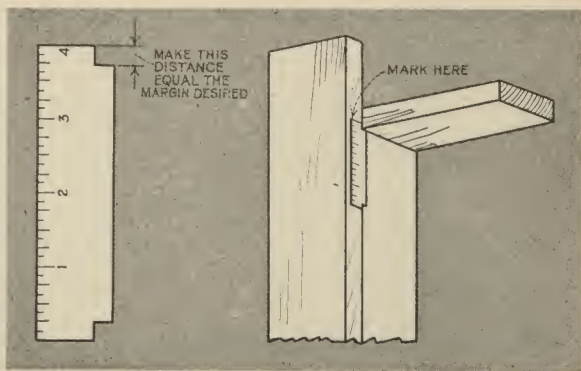
I AM enclosing a sketch of a method I use and find very practical for removing spreaders from deep concrete forms. I take a $\frac{7}{8}$ -inch x 2-inch piece about 10 feet long, and at about 10 inches from one end I cut a slot 1 inch x 4 inches in the center for the lever which is about 5 inches long and made from a piece of hardwood, and $1\frac{1}{2}$ inches wide. I insert this piece in slot, bolting about 1 inch from end to form a lever. Next I rivet a stiff spring on the side of the 1 x 2 that will set up close to the 1 x 2 when closed. By pushing down on the lever, it will open the spring which clamps the spreader when released by the trigger.—C. A. GRIFFIN, Chapin, Ill.



Home Made Device for Picking Up Spreaders from
Deep Concrete Forms.

Handy Casing Gauge

TO mark quickly and accurately the place to cut the upper end of a casing, a little tool like the sketch below is very useful. The notches on the two ends should be made $\frac{1}{8}$ -inch and $\frac{1}{4}$ -inch respectively; other figures may be used depending on the desired width of margin around the jamb. By making the ends exactly square and dividing the back into sixteenths of an inch, the usefulness of the tool is greatly increased. A con-



Detail of Handy Casing Gauge that Saves Time and Is Accurate.

venient length is four inches. The width should be about $\frac{3}{4}$ inches, the thickness of a standard board. Any scrap of metal may be used, but brass, about 18 gauge, is perhaps the best.

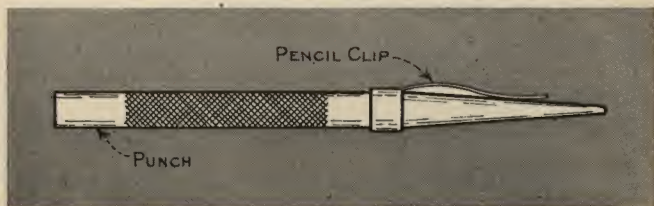
Fit the lower end of the casing to the floor in the usual manner; stand the casing in place, but flush with the jamb. The notch in the gauge is put against the under side of the head jamb.

H. R. EMMERSON, College Place, Wash.

Pencil Clip Nail Holder

THIS nail holder is an ordinary pencil clip fastened on a center-punch. One who knows realizes how hard it is to hold a tiny nail in a position in which it can be struck by the hammer without injury to the fingers. With the nail holder, the nail is simply clipped in between the tongue of the clip and center punch, placed in the proper position for driving, and nailed.

WILLIAM FOIT, Berwyn, Ill.



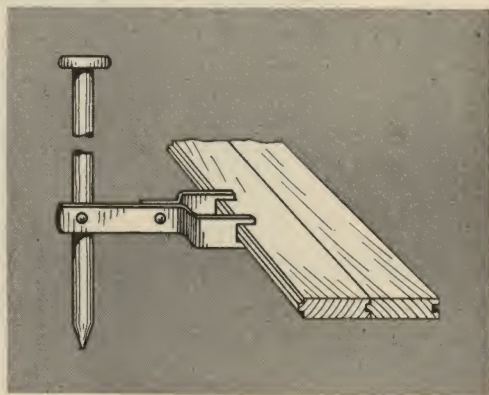
Ordinary Pencil Clip Holds Small Nails Until Driven by Hammer.

Flooring Jack

IN your issue of last April, there is a flooring jack described by Mr. Willey. I am sending sketch of one I made, and have used for years. It has the advantage over all others I have seen inasmuch as it can be used when laying flooring *over sub-flooring*; also, when laying any kind of tongue and groove stock which needs forcing into place. The end of the handle is pointed and driven into the sub-floor like a chisel. The handle is of convenient length, about 18 inches, and is driven into the floor by striking sharply with a hammer.

CLEM J. GARDNER, Stony Creek, N. Y.

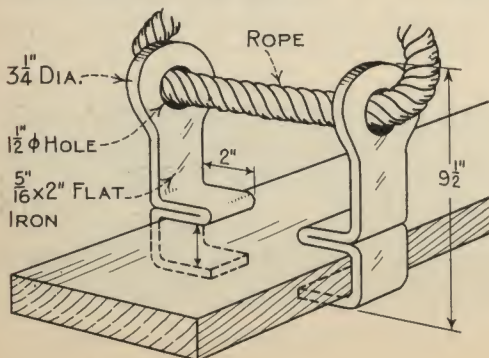
Spike Is Driven
into Sub-Floor
and Gives
Good Lever-
age on Finish
Flooring.



Timber Dogs

I AM sending in a sketch of what I call my "timber dogs." I find them quite handy any place where timbers or heavy boards are to be elevated higher than they can be reached. I have two sets, one for hand line and the other for block and tackle. The size of the "bite" the dog will take depends on the size of boards you have to handle. The one in my sketch is for handling 2-inch planks.

E. J. ELKINS, Alva.



These "Dogs"
Are Handy for
Hoisting Heavy
Boards or Tim-
bers.

Golf Tee Wedges

SMALL round pieces of wood are generally fitted and expanded into holes by means of a small whittled wedge which enlarges the end of the piece as it touches the bottom and the round piece driven over it. Such wedges, particularly with light brittle stuff, often crack it and do not allow the piece to sit straight. Get a package of inexpensive golf ball tees of the



Golf Tees Make Hard, Smooth Wedges Useful for Building Purposes.

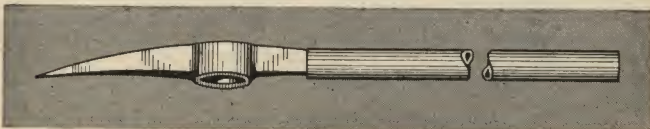
type shown above with the tapered ends or points. A small hole can be drilled into the end of the round piece, an end cut to suit from one of the tees, placed in the hole and driven in. It expands the end evenly, is not so liable to split or crack, and affords a straight, even job. Can be quickly and easily cut to any sized stick and small hole. A packet of them will do a good many jobs of this kind.

FRANK W. BENTLEY, JR., Missouri Valley, Ia.

Pick Gets Into Corners

HERE is a handy kink for builders: when there isn't room enough to swing a pick, take the head off, slip it into a pipe as indicated in the accompanying sketch, and you are ready to go ahead. You can get into any corner with a pick of this kind, and although the force of the blow is reduced a little, it is still an effective pick.

W. F. SCHAPHORST, Newark, N. J.

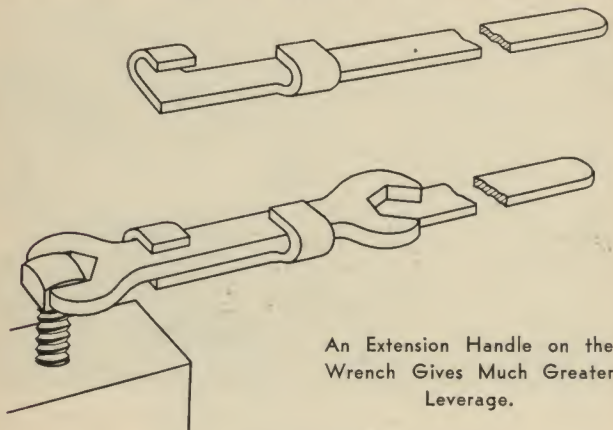


Using Pick This Way Works Well in Close Quarters.

For Extra Leverage

OFTEN a little extra leverage is needed on a short, open end wrench in order to force a bolt or lag screw home, or to loosen it. To obtain this extra leverage an extension can be made, as shown in the sketch. This extension is made from strip or plate stock to fit the complete set of wrenches. A slight side movement will attach or detach it instantly.

CHAS. H. WILLEY, Box 73, Concord, N. H.

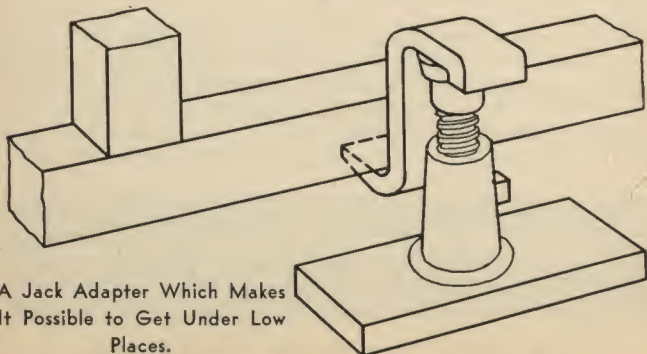


An Extension Handle on the Wrench Gives Much Greater Leverage.

Jacking Up Low Beams

THE idea shown in the sketch is quite simple but has proved valuable on both old and new construction work for adapting the screw jack to the particular job in hand. A piece of steel formed as shown makes it possible to get the lift of the jack under beams which are too low to admit the jack itself. Any blacksmith can make a set of the adapters from $\frac{3}{4}$ by 4-inch bar stock, or heavier, according to need.

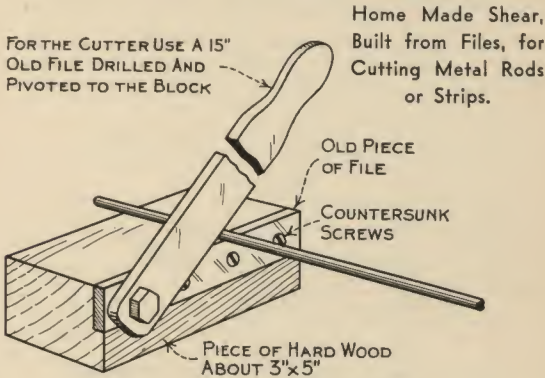
CHAS. H. WILLEY, Box 73, Concord, N. H.



A Jack Adapter Which Makes It Possible to Get Under Low Places.

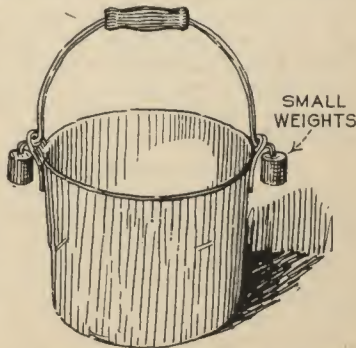
To Cut Steel Rods

IN the sketch below I am showing the method I have developed to cut light rods or reinforcing. Others may be doing the same thing but it is new in this section at least to me. I use two old files of large size, firmly mounted on a block or bench. The important point is to get a firm connection between the cutting file and the stationary one. It must be tight but not too firmly fastened to make it difficult to move up and down. A swift, quick stroke is used to shear off the rods or strips to be cut.—R. H. HENDERSON, Chicago, Ill.



Holds Handle Up

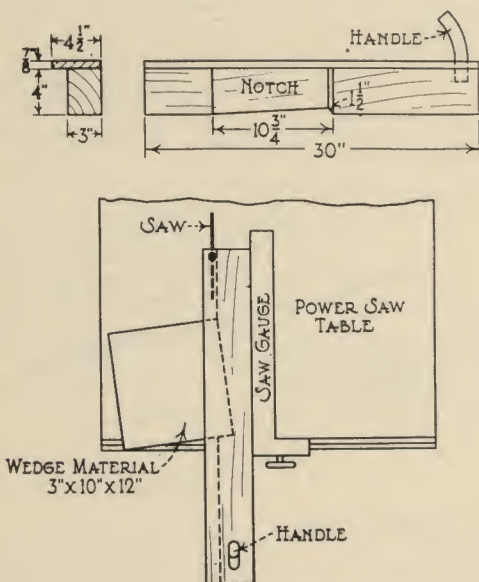
THE handles of mortar pails have a tendency to fall back to the sides of the pail, causing them to get full of mortar. This makes it a disagreeable job to carry them. This problem was easily solved by a sheet metal worker. He shaped the handles of the pails as shown in my sketch, and added small weights to the ends. If the handle starts to fall to the side, the weights bring it upright again, as it is heavier at the bottom. This assures at all times a clean handle, and a firm grip. The weights are made by pouring hot babbitt into a mold made of clay, and dipping the ends into them while the babbitt is still hot.—A. S. WURZ, JR., Rockyford, Alta., Can.



Above Is Shown Method of Weighting Pail Handle to Keep it Erect.

Cutting Wedges on Power Saw

HERE is a sketch of a device for cutting wedges on a power saw, cheaply, quickly, and with perfect safety. I use a piece of three by four-inch board, 30 inches long. In this I cut a wedge shaped notch, beginning about six inches from the end, in the four-inch side. I make this notch $10\frac{3}{4}$ inches long and $1\frac{1}{2}$ inches deep.



With This Device Wedges Can Be Cut on the Power Saw Quickly and Safely.

On top of this piece I nail a $\frac{7}{8}$ by $4\frac{1}{4}$ by 30-inch piece. This projects $1\frac{1}{2}$ inches over the notch and forms a guard. I then make a mortise, for a handle, in the end farthest from the notch. I make the handle with a little curve forward to fit the hand.

To use this device, I raise the saw till it stands about $3\frac{1}{2}$ inches above the table, and set the gauge $3\frac{1}{4}$ inches away from the saw, leaving $\frac{1}{4}$ inch clearance. The wedge material is cut 12 inches long and 10 or 12 inches wide, and any thickness desired. I then place the device against the saw gauge, place one of the pieces of wedge material in the notch and saw one wedge. Turn the block end for end and saw another wedge, and proceed in this way.

H. B. MASON, Duncan Falls, Ohio.

Power Saw Attachment

I AM sending you a sketch of a device for making 45° or Chamfer Strips. Material for same consists of:

One piece hardwood 2"x7"x14" long.

One piece hardwood 1½"x2½"x12" long.

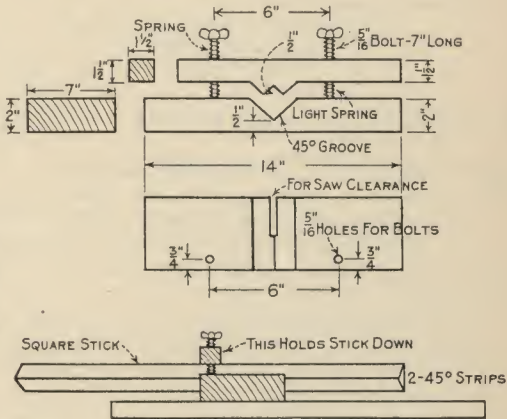
Two 5-16" bolts 7" long, with wing nuts.

Two springs 2" long, about ¾" diameter, about 16 gauge for top.

Two springs 2" long, about ¾" diameter. Not so strong for bottom.

Cut a 45° groove in middle of 14" piece, leaving ½" of wood. Cut ⅛" slot about halfway through, or 3½" in bottom of this groove for circular saw clearance. Bore two ⅝" holes ¾" away from the edge and 3" from center on the side away from slot. Sink the heads of bolts and drive them in. Make the piece for the top. Saw a 45° groove ½" deep in the center

Power Saw
Attachment
for Making
Chamfer
Strips.



of this piece. Make a mark on a 45° from edge of this groove both ways. Rip 1" of wood away until you come to mark. Bore two ⅝" holes ¾" from center, ¾" from edge.

To assemble these pieces, first, put the light springs on bolts, then the top piece, next the stronger springs and wing nuts. Place this on the saw-table so that the saw is in center. Bring up the guide, put a C clamp on the other end.

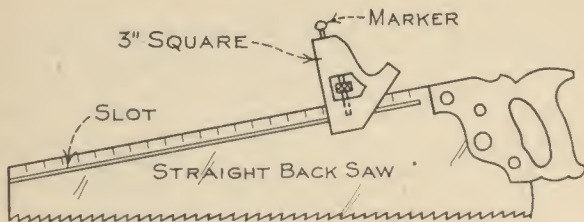
First square your pieces ¾" or 1¼" (whatever you want). Allow ⅛" larger for the saw cuts away some of the material. Use a fine saw for this work.—H. B. MASON, Box 13, Duncan Falls, Ohio.

Square, Saw, Rule and Mitre

A STRAIGHT back saw and a part taken from an old sliding square are all the parts needed to make this handy tool. Any machinist or toolmaker can cut a groove in the saw. The groove is cut in according to the size of the square. The one that I used was only 3" and the groove is ½" from back of saw.

I find this square very useful in work on stagings or in close corners where it is hard to be reaching for tools all the time.

It is never in the way and doesn't add any extra weight to the saw. I keep mine back against the handle all the time for a square cut and for a mitre just slide along, mark it, and slide back again.—G. O'NEILL, 2051 E. Main St., Bridgeport, Conn.



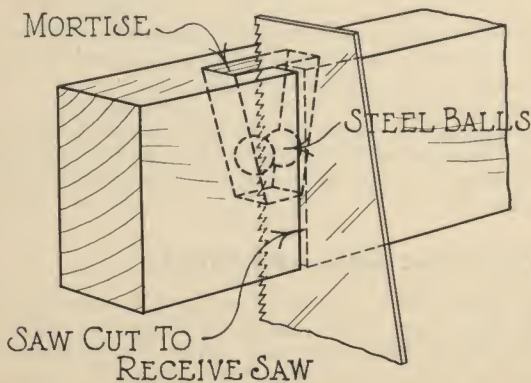
Four Tools in One Are Produced by This Addition.

A Convenient Saw Holder

A CONVENIENT arrangement for taking care of hand saws is most important. Such a holder can be made as shown in the accompanying sketch. Take a length of two by four and cut in it as many mortises as you have saws to take care of. These mortises must have the sides beveled to accommodate two steel balls.

A saw cut is then made through the center of the mortise to receive the saw blade. To hang the saw up, it is pushed up in the slot between the two balls. A slight downward pull causes the balls to pinch the blade and hold it securely. An upward push releases the saw when it is wanted.

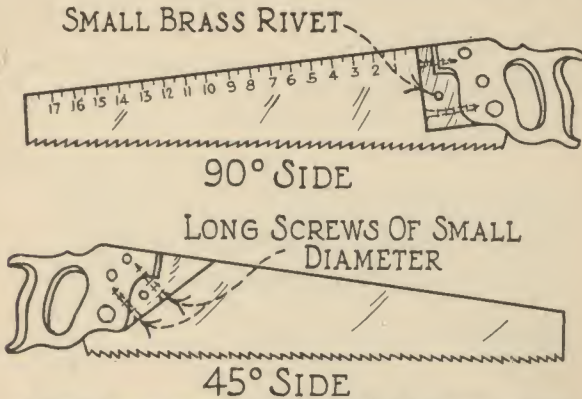
M. M. STAHL, Raley, Alta., Canada.



Here Is a Simple and Convenient Saw Holder Which Anyone Can Make from a Piece of Two by Four and a Couple of Steel Balls.

Makes the Saw More Useful

THE utility of the ordinary hand saw may be greatly increased by adding to it a 45-degree angle, a 90-degree angle and a rule. Select a straight-backed saw and fit a small,



A Small Block Attached to Each Side of a Saw to Measure Angles and a Rule Etched Along the Back Are Useful.

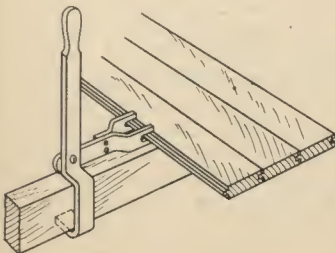
hardwood block to each side as shown in the sketch. These blocks are so shaped that when placed against the edge of a board, the back of the saw marks an angle of 45 degrees, in one case and 90 degrees in the other case, with the edge of the board.

These blocks are fastened to the handle of the saw by means of long screws of small diameter and, when in position, at least one brass rivet through the saw blade.

From the edge of one of these blocks, preferably right angle one, graduations, in inches and fractions, should be laid off and etched into the table.

MORRIS A. HALL, White Plains, N. Y.

Flooring Jack



This Simple Jack Gives Tight Fit.

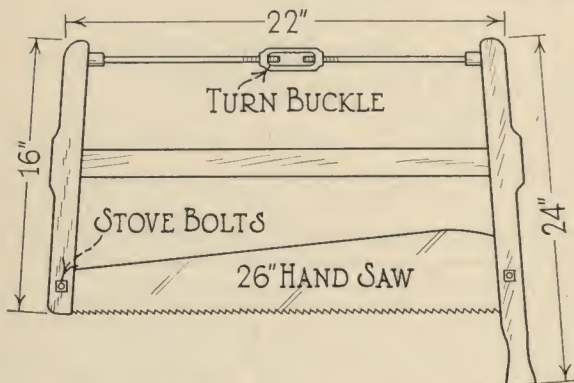
FOR jacking flooring into place while nailing it, the simple device that I have sketched here is good. It is not hard to make but if one is unable to do so, have a local blacksmith make you one. Just clip the sketch out and take it to him. We find it indispensable in handling slightly curved flooring.—C. H. WILLEY, Penacook, N. H.

For Squaring Timbers

THE sketch shows a special saw which I use with good results for squaring large timbers such as ten by tens. I take an ordinary five point hand saw and punch a hole about $\frac{1}{8}$ of an inch in diameter in one end. With this hole punched it is a simple matter to place the saw in a wood frame of the buck saw type.

Such a saw eliminates the play and swing and makes a perfect cut. The fact that with this saw both hands can be used makes the work quicker and easier.

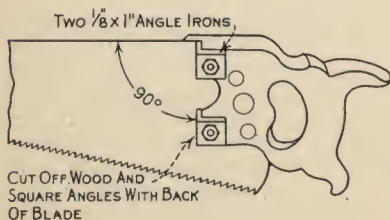
E. A. EDELMANN, 1681 Edward St.,
N. Battleford, Sask., Canada.



An Ordinary Hand Saw Placed in a Buck Saw Frame Like This Makes a Perfect Cut in Large Timbers More Easily and Quickly.

Uses Saw As Square

BY cutting off a small part of the handle of my saw, as shown on sketch enclosed, and attaching two small angle irons, with nuts and bolts, I make the saw do duty as a square also.



Angle Irons Serve as Guides.

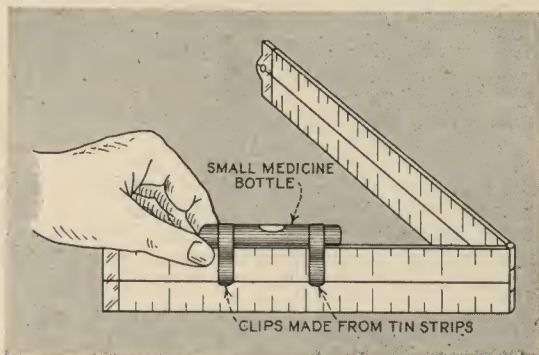
The irons are laid on top of the wood of the handle, with the bent portion turned toward the blade, and were made from a piece of strap iron, one-eighth of an inch thick and an inch wide. On my saw one had to be a little longer than the other. They were easily made in a few minutes.

A. H. STAIR,
Moraga, Calif.

Level on Rule

SHOWN below is a handy level that clips on rulers, boxes or other flat surfaced objects that may be easily made from a small medicine bottle and two short strips of tin. First fill the bottle with colored water, leaving space for a small bubble. Tighten the strips on each end of the bottle in the method shown, allowing the clips to extend down about 1 inch. When in use the tin clip is slipped over the object until the bottom of the level bottle is flush with the surface.

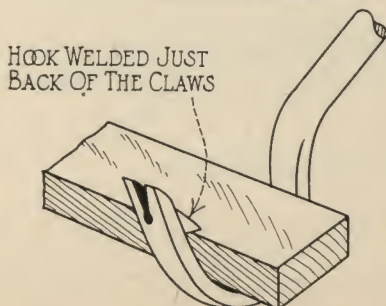
LEONARD MITCHELL, San Francisco, Calif.



Handy Hook

I AM sending in an idea which worked out very well for us. I had a blacksmith weld a hook just back of the claws of the round end of my wrecking bar, which may be used to straighten headers, or hold joist while nailing. It is used in many ways. In placing the hook, the size of the curve in the bar must be considered. For a large bar with a large curve, the hook should set farther back from claws. The hook may be $\frac{3}{8}$ in. deep and as wide as the bar will permit.

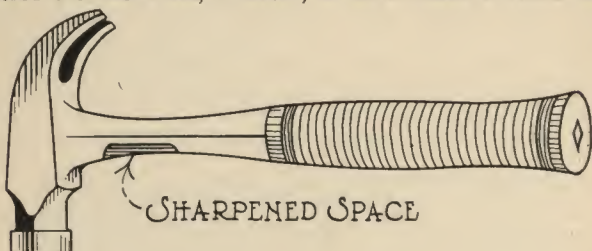
AUGUST JURGENSEN, Zwingle, Iowa.



Hook Improves Bar's Usefulness.

Improving an All Steel Hammer

THERE is an all steel hammer now on the market which is, in my opinion, the best hammer obtainable. I have altered the one I use, however, so as to make it much more

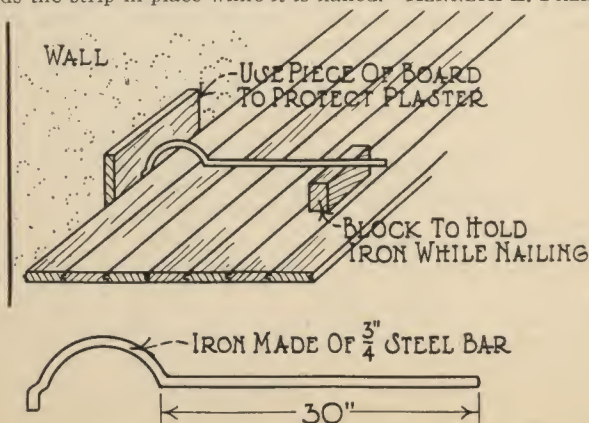


Sharpened as Shown This Hammer Is a Handy Tool to Use
When Applying Wood Shingles.

useful than it was when I originally bought it. I worked down a space about $1\frac{3}{4}$ inches long, along the neck of the handle and sharpened it to a good edge. With this improvement the hammer serves the purpose of an ax or hatchet and is especially handy in applying wood shingles.—WM. YOUNG.

For Laying Flooring

WHEN laying flooring up close to a plastered wall, it is difficult to get the strips tight as there is not room to use a hammer. For this purpose I use the bar shown in the sketch. It is made from a $\frac{3}{4}$ -inch steel bar, bent to shape. A block of wood against the wall keeps the plaster from being marred. Another block of wood, of the right size, placed under the handle of the bar, after the strip is pulled up tight, holds the strip in place while it is nailed.—KENNETH L. PALMER.



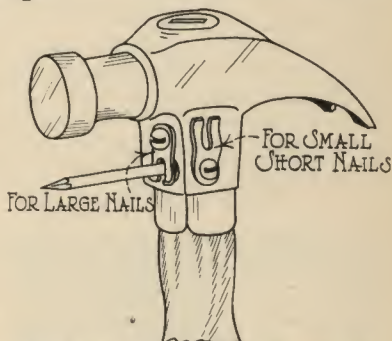
This Simple Bar Is Very Useful in Laying Flooring Close to a Wall.

Nail Holder on Hammer

OFTEN when a job of nailing is to be done an attachment, such as shown in the sketch, which I have made for my hammer, comes in handy. By placing the nail in the clip as shown, it is like having an extra hand to work with, making it possible to nail at arms length.

The nail is held firmly in the clip, in the correct position to start it with one blow. Then the hammer is pulled, releasing the nail from the clip. You can then go ahead and drive the nail.

The sketch shows clearly how the clip is made and attached. All hammers are soft enough to permit easy drilling for attaching the clips which are held in place with screws. The clips are made from pieces of annealed clock spring.

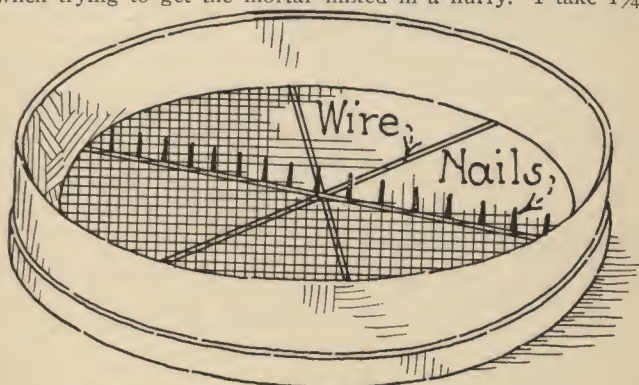


Two Metal Clips on the Hammer Are Handy for Overhead Nailing.

CHARLES H. WILEY, Box 73, Concord, N. H.

For Screening Wet Sand

IN mixing mortar I find that the difficulty in getting the wet sand to pass through the screen makes considerable delay when trying to get the mortar mixed in a hurry. I take 1¼-



Nails Placed Like This Help to Keep Wet Sand from Sticking in the Screen.

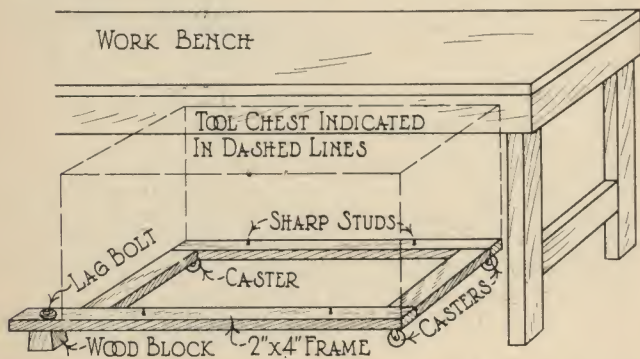
inch roofing nails and put them under one of the cross wires as shown in the sketch. I find this helps.

LEE ROE, 563 Hamilton Blvd., Wood River, Ill.

Support for Tool Chest

FIND the handiest place in the shop for my tool chest is under the work bench but, pulling it out and pushing it back was not handy till I worked out the device shown in the sketch. Now it can be pulled out easily whenever I want to get at it.

For this device, make a frame about the size of the tool chest, of 2 by 4 material, mortised and tenoned together. Allow one side of the frame to extend six or eight inches at the end, as shown, so that when the chest is pulled out it will clear the face of the work bench and allow the lid to open.



With This Frame on Casters the Tool Chest Under the Bench Is Always Easy to Get at.

Put a wooden block, of the same height as the casters, under this extension and bolt down through the frame and block and into the floor. This forms a center, or pivot, for the frame to swing on. Put good casters under the other three corners of the frame. Also put four sharp studs, extending about $\frac{1}{4}$ -inch above the frame, in its side pieces, to engage the bottom of the chest and hold it in place. Fasten a block to the floor, back of the frame, to stop it on a line with the work bench. Set the tool chest on the frame, and the job is complete.

H. O. PEASE, Wapello, Iowa.

Figuring Studding

IAM glad to pass along a method of figuring studs or joists with 16-inch centers. Just measure the length of the wall or floor in feet and divide by two, and divide the quotient obtained by two again. Add one and you will have the number required. For example, the floor is 20 feet long:

Half of 20 is	10
Half of 10 is	5
Add one	1

—
Answer 16

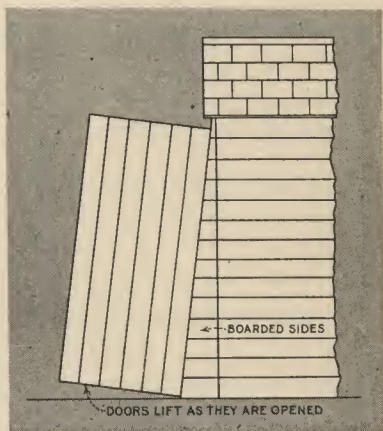
J. GONSALVES, JR., White Plains, N. Y.

Garage Doors Open Easily

THE ordinary side hinged garage door will not open easily after a snowfall because the snow packs behind the door as it is moved. This, of course, necessitates a shoveling job which no one likes, especially in the early morning. This can be avoided by making the doors slightly different, as shown in my sketch.

This alteration consists of inclining the doors a little instead of hanging them truly vertical. A couple of two by fours, one at each side, inclined as shown, are used and the space at the sides boarded up. It will be seen that when the doors are opened they swing up, thus clearing the snow entirely if it is not

Inclining the Garage Doors Slightly as Shown Here Makes Them Clear Obstructions and Eliminates Trouble from Snow in Winter.



too deep; but if it is deep, the action of such doors in opening is to slice the snow, not pack it tight as ordinary doors do.

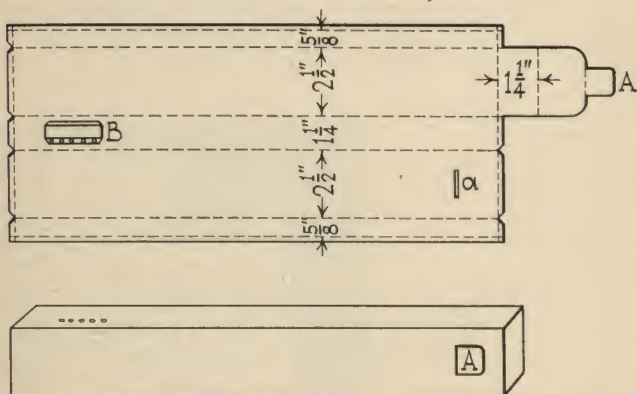
H. MOORE, Hamilton, Ont., Can.

Case Protects Level

THE problem of caring for the level is an ever-present one with all building mechanics. Not only is a good level the most expensive tool in the kit, but it is the one most easily damaged. When even slightly damaged it is an aggravation and a liability to its owner. I have recently hit upon an easily made device which seems to provide effective protection for the level.

This device is a sleeve-like case, made of sheet metal—preferably copper—and fitted with tension spring to hold the instrument in place. It keeps the level clean and bright and protects it from all sorts of jams and bumps. The accompanying sketch shows a sheet of metal cut to shape for this case and marked for bending.

It will be seen that the member "A" passes out through the slot "a" and is clinched to hold the bottom in place. The spring at "B" is preferably made of a short section of spring bronze weatherstrip but almost any flat spring will serve and



Sheet Metal Cut and Marked, and Formed into Case to Protect the Level.

needs only sufficient tension to hold the level snugly in place.

The dotted lines around the edges indicate where bends are to be made to produce the rolled edges and a rolled joint when the metal is folded into shape. In case there is no sheet metal shop handy, two straight pieces and a vise can be used as a breaker, in which case it is advisable to solder the one joint to prevent its opening up.

WALTER KATELEY, 661 E. 126th St., Cleveland, Ohio.

Home Drafting Board

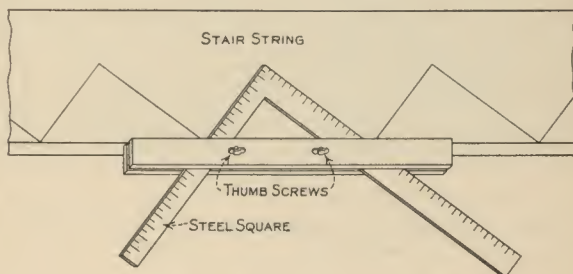
TO make a home drafting board out of an ordinary kitchen table, bore holes in the legs on the wall side and insert round metal rods of proper length to give the desired slant. A higher stand-up board can be made in the same way by boring all four legs and using shorter rods for the front side. Round glass bases or cups can be placed under the rods to protect the floor. Rods can be removed when not in use.

P. C. HOLAHAN, Chicago, Ill.

Helps Lay Out Stairs

I AM enclosing a sketch showing a simple method of laying out stairs, rafters, etc. Simply apply two small pieces of wood about $\frac{1}{4}$ "x $1\frac{3}{4}$ "x2'-0" to each side of the steel square. These pieces are held in place by thumb screws. It saves much time and proves useful in many ways.

W. R. BLUHM, Rochester, N. Y.



Guides Keep Square Held in Place.

Pipes Support Chart-Table

THE switchboard in an industrial plant in our city is studded with a maze of panel metres—clock-dial affairs. Readings of these metres at frequent intervals must be recorded on charts. A table which I devised (and picture herewith) is the ultimate in convenience as one can see, since being built upon (and around) the guard-rails, it is simplicity itself to slide the table directly in front of each successive metre, preventing confusion

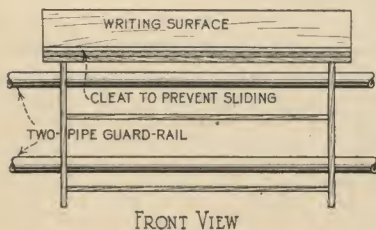


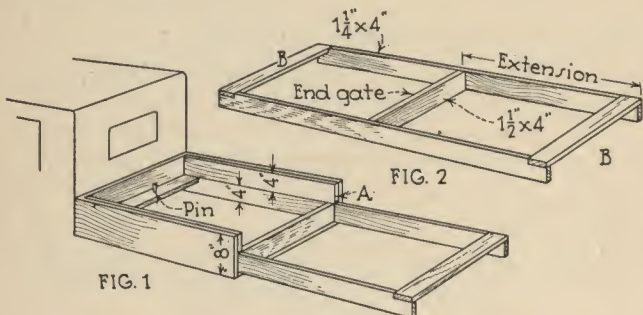
Table Rests on Pipes.

and permitting more accurate readings all along the line. Dimensions and choice of material are optional, of course, and it may prove useful in many other types of places.

BERT W. CULBERTSON, Jackson, Miss.

Making the Truck More Useful

HAVING a light delivery truck, with a plain square box body, as in Fig. 1, I found I could make it equally useful for other purposes than merely hauling tools. I made a



Such a Frame Fitted to the Small Truck Makes It Possible to Haul Lumber When Needed.

frame to fit onto this truck which enabled me to use it for hauling small amounts of lumber, long pieces, such as are frequently needed for a job.

I made a frame of $1\frac{1}{4}$ by 4 inch material, as shown in Fig. 2. This sketch is self-explanatory except for one point. At the proper point there is built into this frame a cross piece of $1\frac{1}{2}$ by 4 inch material in such a fashion that, when the frame is slipped toward the box body, the cross piece will be in the proper position to serve as an end-gate.

The top edge of the cross piece and the two cross bars, B and B, will support quite a considerable amount of finish material or piping of varied lengths or doors.

BERT W. CULBERTSON, Route 4, Jackson, Miss.

Storing Reinforcing Steel

WHERE much reinforcing steel is being used on a construction job, it will pay to use a system for segregating the various sizes, kinds and lengths, so that any laborer can select the material he is told to get without delay. The system illustrated here is a good one.

The reinforcing steel is laid in neat piles on the ground, the different sizes, kinds and lengths are separated by short pieces of rod driven into the ground. At one end of the rows of material, a long board is nailed to stakes driven into the ground. Opposite each pile of steel, the size length and other descriptive information about the material is marked on the board. When looking for certain material a glance at the board tells where it find it. An experienced workman attends to the sorting and piling of material.

JOSEPH C. COYLE, 538 Santa Fe Drive, Denver, Colo.



If Reinforcing Steel Is Segregated and Marked as Shown Here
It Is Quickly Located When Wanted.

Sawing Gauge

ONE day while sawing and chiseling the grooves for door jambs, I happened to saw too deep. Thinking about how to prevent such a mistake, I hit on the idea shown in the sketch.



Simple Gauge That Prevents Sawing Too Deep
When Grooving Jambs.

This is a gauge which clamps onto the saw and makes it possible to saw to any depth accurately.

This gauge consists of two strips of wood $\frac{3}{8}$ -inch thick, $\frac{3}{4}$ -inch wide and about 2 inches longer than the blade of the saw. These pieces must, of course, be straight and square. Bore holes in these strips half an inch from each end and put a bolt through each pair of holes.

When the strips are bolted together, slip them onto the saw, measure with a ruler the depth you want to saw and tighten the bolts so that the strips grip the saw firmly. When the gauge touches the board you are sawing, you know you have just the right depth. DONALD DE VRIES, Cortland, Neb.

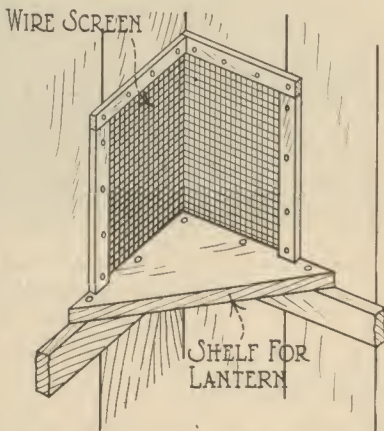
Lantern Protection

FREQUENTLY, during the construction work, it is necessary to obstruct a public walk with a fence. In such a case red lanterns must be provided to give pedestrians warning of the obstruction, and avoid legal liability. If lanterns are placed as shown in the sketch, they will be protected against being blown down, overturned or stolen.

This plan was followed by an eastern contractor with good results. A portion of the fence corner was cut away, making an opening about 15 inches high. The opening was covered, on the inside, with a piece of heavy screen wire and a self was placed in the corner, large enough to hold the lantern.

The lantern was, of course, placed from the inside but, when lighted, gave plenty of light through the screen. The whole job can be done by a carpenter in a few minutes.

MORRIS A. HALL, White Plains, N. Y.



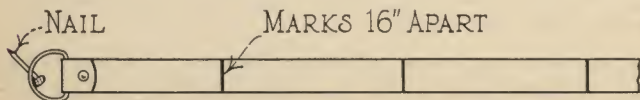
The Red Lantern Is Placed on the Shelf Where It Is Protected by the Screen.

Improving the Steel Tape

HERE is an idea which I have found so useful that I am trying to get some of the manufacturers of steel tapes to adopt it. I have etched a bar mark on the back of my steel tape every 16 inches, to be used in placing studs, joists and rafters.

I drive a nail at the starting point and then mark for the studs as the tape rolls out. It saves time as compared with using a square.

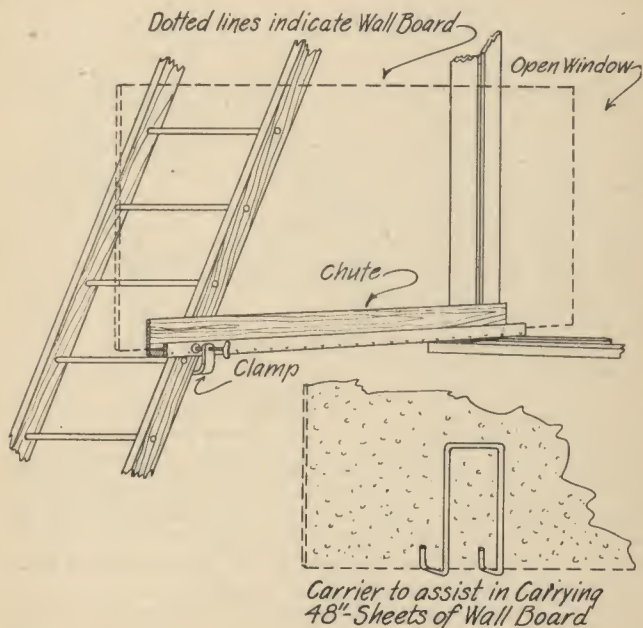
E. J. HUNTER, Tabor, Iowa.



Marks at 16-Inch Intervals on the Back of the Steel Tape Save Time in Marking for Studs.

For Handling Wallboard

WHEN you are called upon to finish off a room with wallboard on an upper floor and the stairway is too narrow or too winding to allow the large sheets to be carried up, try this method. Place an extension ladder against the house, beside a convenient window. Attach to it a chute, as shown in the sketch, made of two boards and a two by four. This should be clamped or nailed to the ladder. Make a carrier,



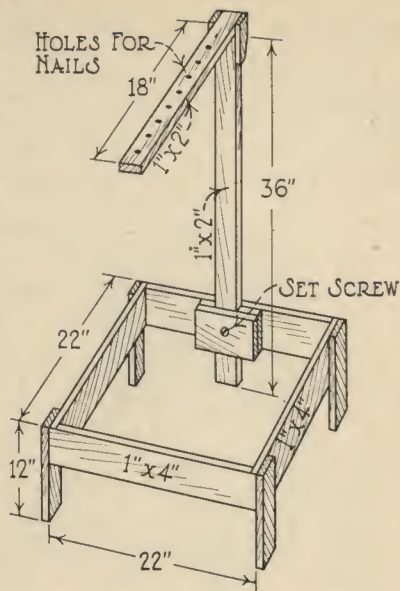
This Carrier and Chute Are Simple to Make, but Very Useful in Getting Large Sheets of Wallboard into Upstairs Rooms.

also shown in the sketch, of heavy wire or band iron. With this carrier it is a comparatively easy matter to handle the sheets, taking them up the ladder and placing them in the chute. Once in the chute it is easy to slide the sheets through the window, into the room where they are to be installed.

L. W. PIKE, 17 Brattle St., Brattleboro, Vt.

Screen Drying Rack

THE sketch shows a rack which I have found very useful for holding screens while the paint is drying. The upright piece, with the overhanging cross bar, is adjustable to the height of the screens. It is kept in position by means of a common wood screw. There is a row of small holes in the cross bar, spaced two inches apart, and large enough to allow an eight-penny nail to drop into them loosely but not large enough for the nail head to drop through.



A Simple Drying Rack for the
Screen Painter.

For use, the upright is adjusted so that the cross bar is at a height above the base one inch greater than the height of the screens to be painted. When the first screen has been painted it is placed under the cross bar leaning against the upright. A nail is dropped into the first hole and the second screen leans against the nail. Another nail is dropped for the third screen, and so on till the rack is filled.

It is well to have two of these racks so that one can be adjusted for the first story windows and the other for the second story windows, which are usually of different height. For drying whole window screens, the screens can be placed crosswise to fit into the rack.

H. N. ROWLAND, Parkerford, Pa.

Salvaging Painted Trim

IT is often necessary to remove finish nails from material, such as trim, which is to be used again, especially in remodeling work. When the nails are hammered out, however, the surface is likely to break and be marred, particularly if it has been painted. This can be avoided by placing a piece of soft lumber under the board and driving the nails back until the head goes partly down into the soft wood beneath. The nails can be pulled, then, without marring the surface.

NILS O. FAGERSTROM, 150 9th St., San Francisco, Cal.

DETAILS OF CONSTRUCTION

RECOMMENDED IDEAS

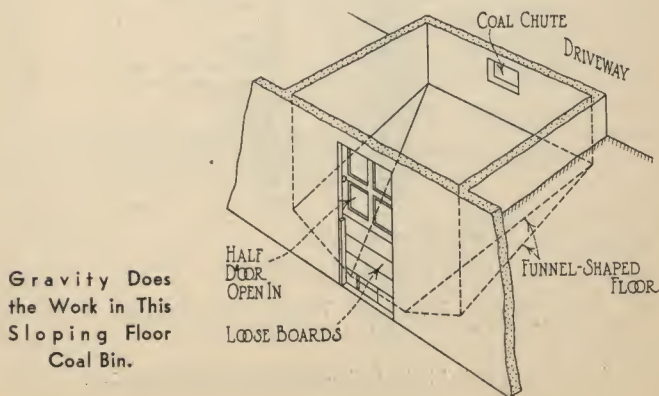
A Good Coal Bin Idea

WHERE the owner has specified a recreation room in his cellar plans or where the builder in planning to construct his house with the added feature of a recreation room in the cellar, he can use to great advantage space underneath the enclosed or open porch for cold storage.

In an idea I used for an owner I excavated but half of the depth under the porch to that of the house, and graded this depth to meet the floor level of the house cellar floor. This graduation of the floor under the porch was funnel-shaped so as to provide a gravity slide for the coal. The doorway from the porch excavation to the cellar was provided when setting concrete forms for the house foundation. This doorway is divided, the upper part being on hinges and the lower part loose boards in a slide that can be lifted out if necessary. The lowest board which is provided for the slide merely needs to be lifted when coal is needed.

The advantages are obvious. More room in the cellar is provided for the recreation room, laundry or for any purpose. The funnel shaped floor of the coal bin forces the coal as it is used to slide toward the door hopper. Likewise, when coal is delivered, coal dust will not filter through the cellar or house.

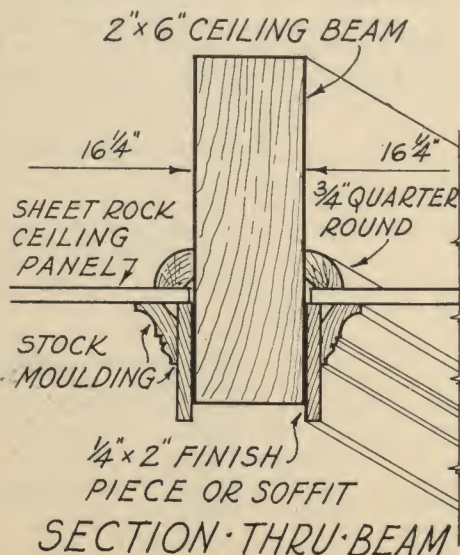
HENRY D. NELSON, Queens, N. Y.



Panel Drop Ceiling for Attic

WHEN one desires to have an extra room or two in the attic and has not sufficient head room to allow an 8 ft. ceiling without breaking into the wall surface, a good suggestion is to place beams below the tie beams, and at even or regular intervals. Place 2" by 4" beams (on spans less than 8'-0" or 2"x6" on spans 8'-0" to 10 ft.) endwise, so that the bottom will be the underside of the ceiling beam. Place each beam exactly $16\frac{1}{4}"$ apart or between beams, so that the ceiling panels (which are made of wall board) may be cut from a 48 inch unit. Cutting it into 3 equal parts, you will have each piece 16 inches by 8 ft. long. Nail the moulding, forming the panel at the bottom edge of the ceiling beam, so as to form the under side of the panel, then drop the 16" panel into place. It will be supported by the moulding as shown in illustration. The same operation is done for each panel and when complete the ceiling will have a series of panels 16" wide and 8 ft. or 9 ft. long. There are many pleasing effects which may be had by using different types of mouldings. A good moulding to use is one having a fillet then an ogee. If a soffit effect is desired, then nail a strip of wood $\frac{1}{4}$ inch thick and 2 inches wide directly on the ceiling beam and then apply the moulding.

W. F. REUTTER, 524 Kipp, Teaneck, N. J.

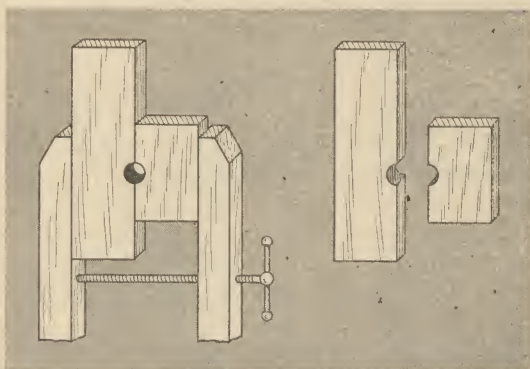


W. F. Reutter's Method of Making Panel Drop Ceiling.

Makes Round Notch Quickly

THE accompanying diagram shows an easy way to cut round notches on the edge of a board. The board with a block of wood is placed in a vise. If a complete half circle notch is wanted, start the bit of the size desired, where the block and the board join.

M. E. COUCH, Little Rock, Ark.



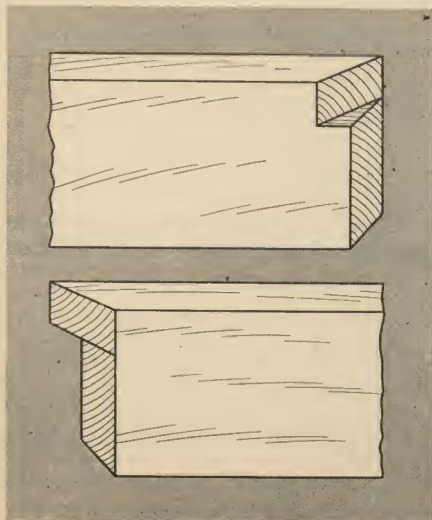
An Easy Way to Notch a Piece.

Fitting Corner Base

I AM sending a drawing showing how I fit baseboard in corners. This works well where round edge base is used and it takes a miter cut to fit. Only miter the board down about one

and a half inches. Take the small block out of the first board and leave the miter projecting on the second. With a little practice a perfect joint can be made speedily.

R. S. DONELSON.

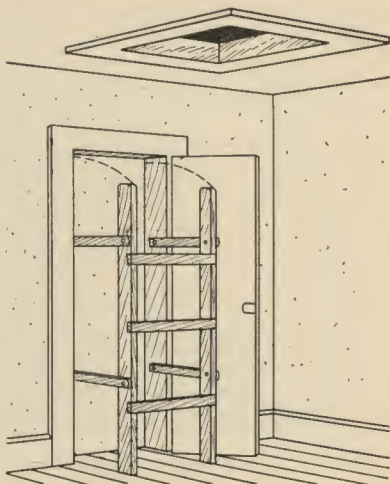


Fitting a Baseboard in Corners Is Done by Taking Small Block from First Board and Leaving Miter Projecting on Second.

For the Stairless Attic

IN many homes where there are no attic stairs, access to the attic is usually through a scuttle in a hall ceiling, by means of a ladder or stepladder which has to be carried in and put away every time it is used. To overcome this difficulty at small cost, one builder uses a folding ladder which is enclosed in a wall cabinet, as shown in the sketch.

This takes up no hall space when not in use—the lack of hall space is usually the reason for omitting the attic stair—but is always readily available when needed. To bring the ladder into position, for use, the door of the cabinet is opened and the ladder is pulled down to rest on the floor, as shown. When through using, the ladder is pushed up and back into the cabinet and the door closed.



Where There Is No Room for Attic Stairs, This Cabinet and Ladder Serve.

G. E. HENDRICKSON, Argyle, Wis.

Cheap Fireproof Vault

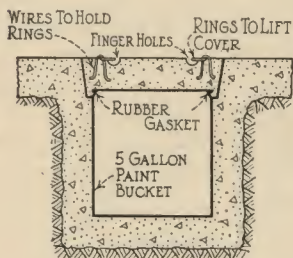
A GOOD receptacle for silver or valuable papers, which might be lost in case of fire, can be built into a home at little cost. Here is my method.

Get a five gallon paint bucket with the rubber gasket on the lid still in good condition. Burn out the paint, or clean thoroughly, remove the bale, and paint inside, say with aluminum paint. Bury in waterproof cement about 3" under the basement floor. Have a tinner make a loping collar 4" high and 'about 1" larger than the bucket on the small end. Set this collar with the small end down, around the bucket flush with the floor. Grease on the inside and fill with concrete to make a top cover. Imbed two iron rings in this lid held in place with heavy

wires in the concrete. Leave finger holes so the rings can be raised for lifting off the concrete cover lid. This concrete cover must rest tight on the bucket lid to hold it damp proof.

If located where it can be hidden with say a basket or rug, no thief would ever find this vault. Of course, its existence should be kept secret from neighbors and small children.

R. R. FLING, 1435 E. 20th Ave., Columbus, Ohio.

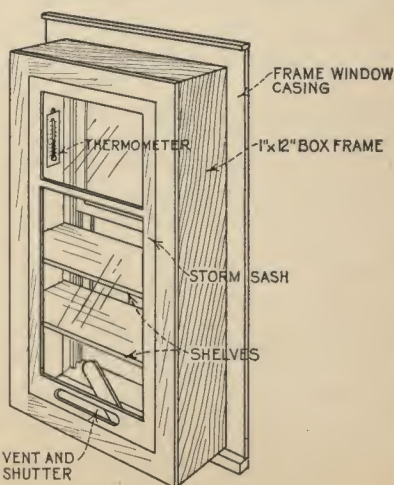


Fire-Proof Vault Easily Made of Concrete and 5-Gal. Bucket.

Winter Window Cooler

MY wife brought home a soap box for me to nail up on the outside of pantry window for outside icing. Feeling a little ashamed, I made the box shown in attached sketch. Meat and other perishables can be reached by raising inside window. Temperature can also be regulated by raising or lowering the window inside. I made the box removable by hooking it to the window frame. Hang a cheap thermometer inside.

PETE A. TIMMER, Villa Park, Ill.

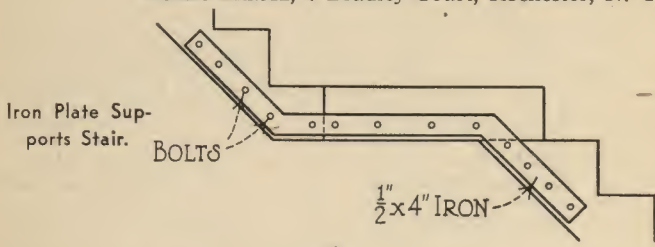


P. A. Trimmer Developed This Economical Out Door Cooler to Fasten Outside the Window When His Wife Asked Him to Make Over a Soap Box.

Supports Stair Platform

ALTHOUGH I have been a subscriber to your publication for many years I do not remember of ever seeing illustrated a method of supporting the platform of a straight flight of stairs as shown in my sketch without extending platform posts to the floor below. Supporting the platform as I show it will be satisfactory. This piece of flat iron may be either bolted or screwed, and one piece to each stringer is required.

ROMEO LAROSE, 4 Bradley Court, Rochester, N. Y.



Stair Platform

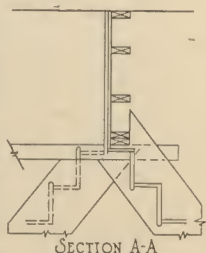
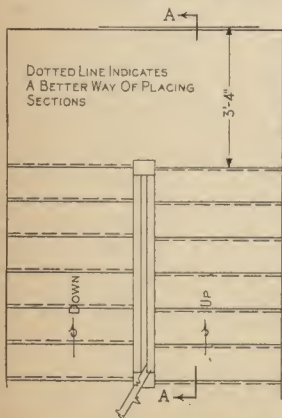
YOU will find here enclosed a sketch showing the conception I have of a better way of erecting platforms and laying out the stair sections.

As a stair builder, I have learned about small details that are not understood by many a good carpenter who comes across a stair job.

There are many things to be said about stairs, and the part they often play in the house should bring them oftener in the **AMERICAN BUILDER**.

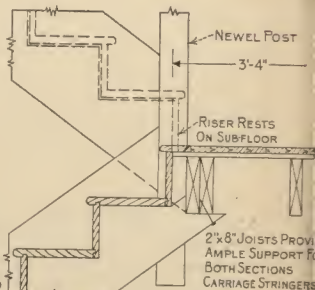
Houses of good taste have a stairway well in view, so its design as well as its construction should be in line with the best in the home.

RENE LECHEVALIER, New York City.



PLATFORM BUILT OF 2x6 JOISTS DOES NOT PROVIDE NAILING GROUND FOR ROUGH CARRIAGE STRINGERS AND IS NOT SATISFACTORY CONSTRUCTION FIRST RISER OF UPWARD SECTION DOES NOT REST ON SUBFLOORING

• WRONG • WAY •



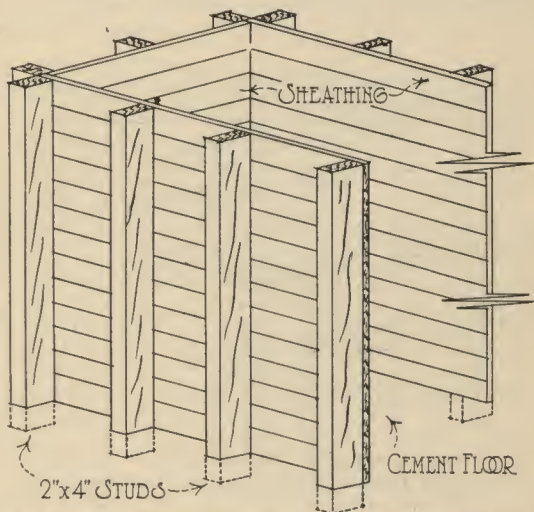
• RIGHT • WAY •

Comparing a Few Good and Bad Details of Stair Platform.

A Sturdy Coal Bin Construction

WHEN building a coal bin I use what I consider a much better type of construction than is ordinarily used. I use 2 by 4 uprights, placed 24 inches on centers. I cut holes in the basement floor of the right size to receive these uprights and bury the uprights at least six inches. The tops are nailed securely to the floor joists above with 20 penny nails. The sheathing is nailed on the inside of the uprights with the result that it will withstand the weight of any ordinary amount of coal.

FRANK F. LISA, 1471 Dixwell Ave., Hamden, Conn.

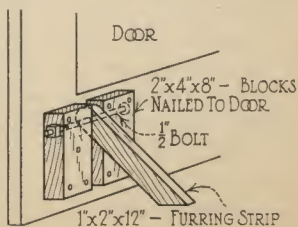


Building a Coal Bin This Way Assures Against Breaking.

Sure Fire Door Dog

I AM sending along another idea that I hope will help someone. I nail two 8-inch blocks on the bottom of the door on the inside of same about 2 inches from the edge. The furring strip is 12 inches long and the bolt is $\frac{1}{2}$ inch thick (see sketch). This produces a sure fire door dog that is very useful and strong.

FRANK F. LISA, 1471 Dixwell Ave., Hamden, Conn.

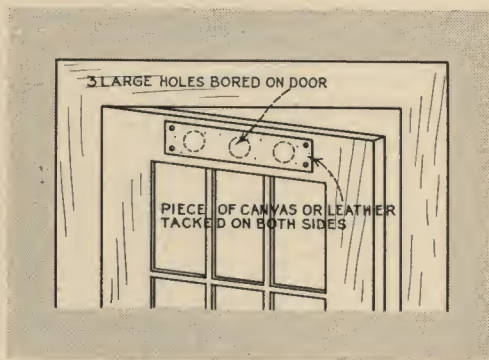


A Door Dog that Is Easy to Make and Simple in Operation.

Escape Valve for Storm Door

THE compression between a tight storm door and the regular door causes some delay in closing. This may be overcome by using the simple valve illustrated. It is made by boring three large holes in the top of the door and covering them with a strip of canvas or leather. The strip is held, not too tightly, by tacks on either end. When the door is being closed, the strip bulges with the escaping air, and when closed, cold air can not enter from the outside because the action is reversed and the strip is pushed against the holes. If the regular door is equipped with a similar valve, no difficulty will ever be experienced in opening or closing the door either from suction or compression.

L. P. YOUNG, Culver, Indiana.



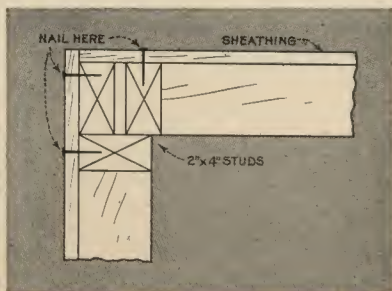
Above Is Improvised Valve for Storm Door to Enable It to Shut Without Delay from Air Pressure.

Best 3-Stud Corner

I AM enclosing a sketch of my method of a three-stud corner for dwellings which makes a better job if properly nailed than the one illustrated on page 40 of the April issue. It is highly recommended.

WM. S. LIBBEY, Longmeadow, Mass.

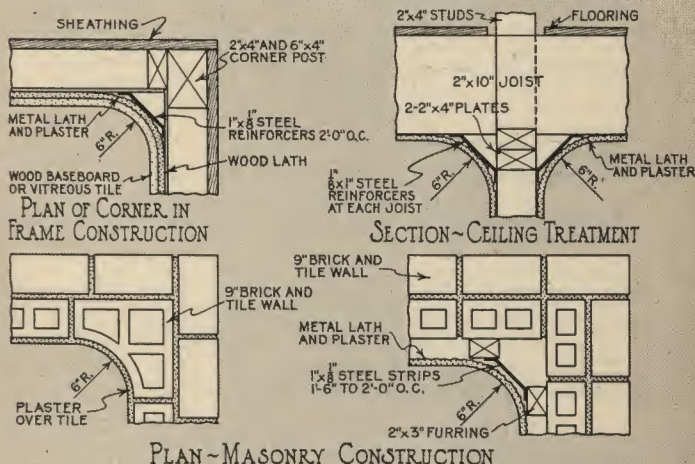
The Building Superintendent, Mr. Libbey, Who Is Superintendent of the Building Department of Longmeadow, Recommends This Three-Stud Corner.



Eliminates Angle Corner

SINCE there has been a tendency in recent dwelling construction to make the home easy for the housewife to care for, I wish to call attention to a simple method of improving the dirt-catching, angular, room corner. The idea, I believe, has been used to some extent in hospital construction.

I have enclosed a sheet of sketches to illustrate this idea which seems to be fairly practical but has not been properly tested. Referring to the drawings, in some instances it might be more advantageous to reduce the radius of curvature from 6" to 4 or 3. With a large radius one cleaning a floor with a mop would find it easy to get at the dirt that collects in the corner without digging for it. GEO. F. JACKSON, Anaconda, Mont.



Method of Eliminating Corner Angle to Make Cleaning More Easy for Housewife.

Favors Concrete Strip

A CONCRETE strip running around the house—3" wide and about 3" deep—saves time and keeps the foundation clean.

It saves time in trimming the grass, as the mower can be run with one wheel on the concrete.

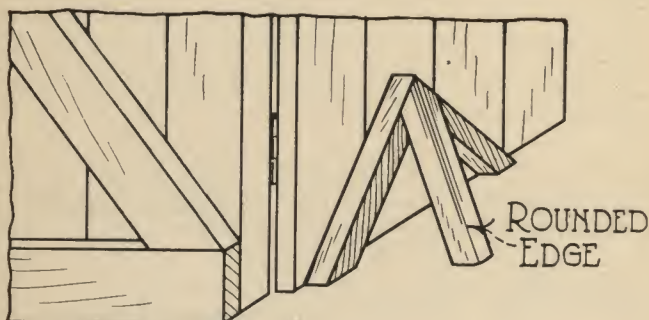
It keeps the foundation clean by not allowing a heavy rain to splash dirt on it. This especially, where the house is white or stucco, can add to the appearance.

It costs but little to build, as no forms are made. Just cut out the sod, and fill to dirt level with concrete. Finish with a trowel.

BROOKS SHUMWAY, D-4, Hines, Ill.

A Simple Door Protector

LARGE doorways used for heavy trucking are protected by means of iron corners but nothing of the sort is available for private garages though the need is often just as great. Both the corner of the door frame and the edge of the door can be protected by means of a simple guard.



A Simple and Inexpensive Guard for Garage Door Frames Can Be Made from Three Pieces of Two by Four.

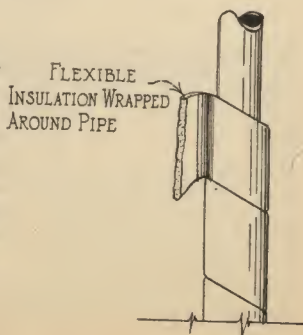
Two pieces of two by four are fitted together to form a right angle and a third piece is fitted to these at the apex, as shown in the sketch. The edge of the third piece is rounded off and the form is nailed to the door frame at the point to be protected. The third member of the form rests on the ground and projects enough to act as a guard.

Because the edge is rounded, it will not cut or bruise the tires even though they strike it a hard blow. The smaller the angle of the third leg, the stiffer and stronger the guard, but even if it should get broken, it is easily and inexpensively replaced.

MORRIS A. HALL, White Plains, N. Y.

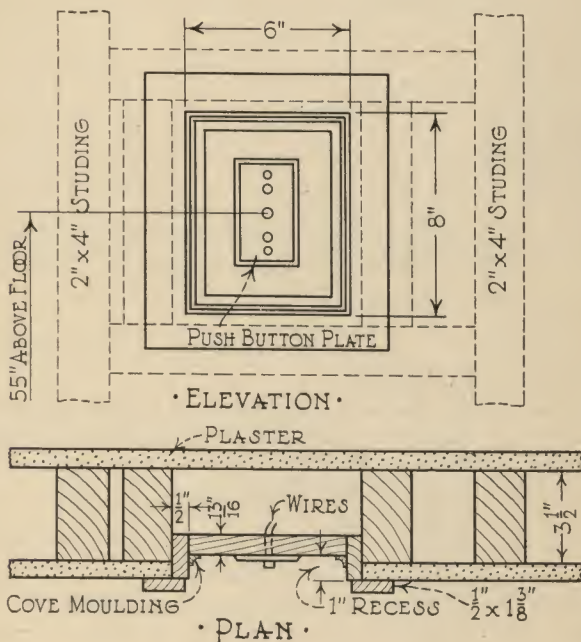
Quiet Soil Pipes

ORDINARY flexible insulation wrapped around bathroom soil pipes eliminates about 80 per cent of the noise. This is a very desirable and inexpensive feature when the soil pipe happens to be located in one of the living room partitions.—T. M. BARTHEL, 2324 Dime Bank Bldg., Detroit, Mich.



Recessed Switch Plates

THE usual method of installing the push button plate for gas-fired furnaces is to cut a hole in the plaster and screw



A Recessed Installation for a Gas Furnace Switch Plate
Makes a Better Job.

the plate to the lath. There are several objections to this method. The plate being set flush with the plastered wall is often mistaken for an electric light switch. Also this does not give a substantial bearing for the plate to be screwed to and, as a result, the plate works loose in time, causing the plaster to crack, peel off and fall on the floor.

With the method of installation shown in the sketch, the plate is recessed into the wall, neatly and firmly cased in and, when painted to match the trim, looks attractive. Being recessed makes it distinctive so that it will not be mistaken for a light switch.

J. B. FRANZINI, 905 McKelligan Ave., El Paso, Tex.

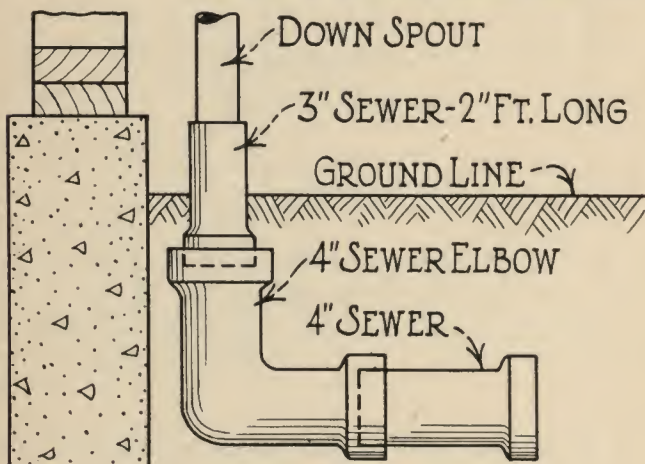
Down Spout Drain Connection

IN connecting down spouts and drain tile to carry away roof water, I find many are puzzled as to how to make a connection that will be both neat and effective. The sketch shows a method which I have used and found highly satisfactory.

I run a four-inch tile to within a foot of the building. Here I run it into a four-inch sewer ell with the collar turned up. In the upper end of this ell, I place a two-foot length of three-inch sewer pipe, with the collar turned down. This fits snugly into the collar of the four-inch ell.

The small end of the three-inch pipe which is turned up just accommodates the three-inch down spout and there is no danger of foreign matter getting into and clogging the sewer.

WM. H. HARTZLER, Marshallville, Ohio.



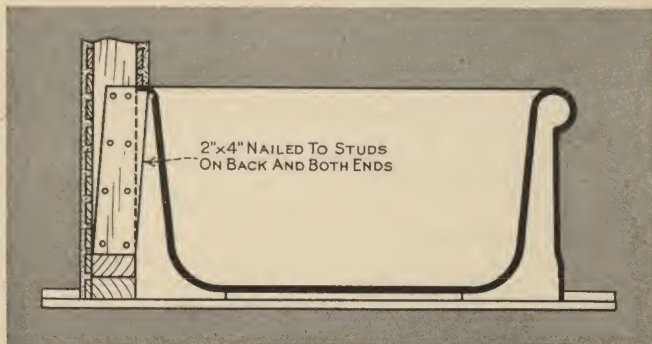
Here is a Neat and Effective Method of Connecting the Down Spout with the Sewer Pipe, Which Avoids Clogging.

2 x 4 Supports Tub

ENCLOSED you will find a sketch of a practical job pointer, which I have found very helpful. I have tried various ways of supporting built-in bathtubs, including metal cleats, angle irons, and bolts, but have found this method fully as effective, and much more simple.

A piece of 2 x 4 is placed with its end solidly against the underneath edge of the rim of the bathtub, and is spiked to the stud. One is placed on each stud on the back and both ends of the tub. I have also used pieces of 1 x 4, and found them just as effective. When this system is used, no crack develops

between the bathtub and the plastered wall. Cracking of plaster and sagging of tubs is a defect that has caused many builders trouble. Several patented devices have been put on the market



Two-by-Fours Are Set at an Angle to Support Bath Tub and Prevent Sagging or Cracking.

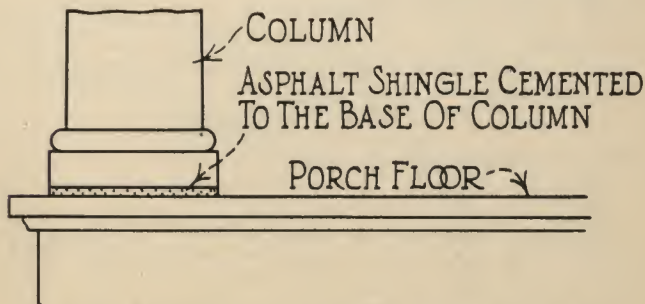
the past few years, but most of them are too expensive and not easy to get. This home made bracket does the job well and without much expense.

THOMAS L. LLOYD, Denver, Colo.

Prevent Rotted Columns

MANY people seem to have trouble with porch columns rotting out at the bottom. In replacing such columns I always cement an asphalt shingle to the base of the column, as shown in the sketch, with the slate surface down. This has worked well in preventing rotting where the column rests on a masonry floor.

A. H. OLSON, North East, Pa.



An Asphalt Shingle, Slate Surface Down, Placed Under a Porch Column Will Prevent Rotting of the Column Base.

Septic Tank Grease Trap

IN small towns and in the suburbs and country, beyond the reach of city sewerage systems, homes are generally equipped with septic tanks. The action of these tanks is based on the action of certain germs which are likely to be killed by an accumulation of grease and soap. In order to avoid this, I planned a grease trap to be built into one corner of my basement into which all the waste must pass before reaching the septic tank. This keeps the grease out of the septic tank.

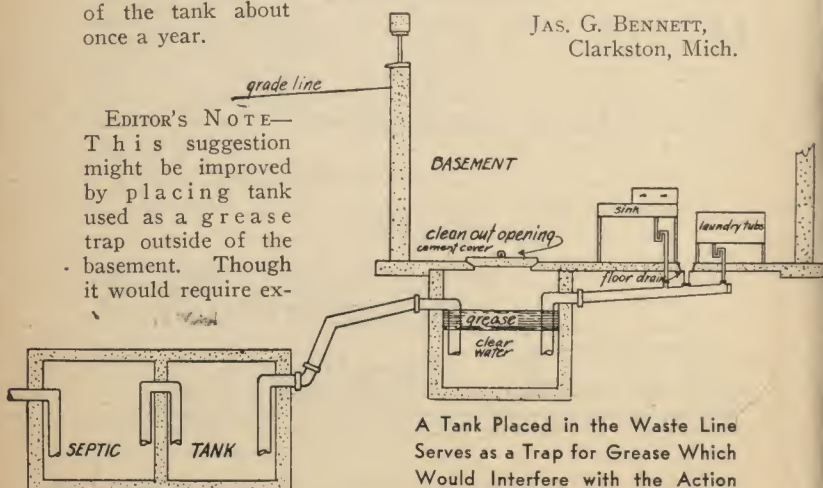
I made a cement tank below the level of my basement floor but high enough to have a flow to the septic tank outside. This tank is three feet wide by four feet long and is four feet deep. It is cemented tight on all sides and the bottom and has an opening in the top for cleaning, which is tightly closed with a lid of cement.

I placed a four inch soil pipe elbow, onto which I had worked about two feet of soil pipe, in one wall of this tank as shown in the sketch. This pipe hangs down inside of the tank. On the other end of the tank I placed a similar pipe, making it reach about two inches closer to the bottom of the tank. This was the overflow end.

The wastes flow into the tank through the first pipe and drop to the bottom of the tank. As soon as the tank fills to a level above the end of the overflow pipe, all greases rise to the top and float. About once every three months the floating greases are removed and buried outside. This also cuts down the danger of stoppage of the waste pipes from the sink and tubs because of having a very short run. All sand and dirt is also trapped in this tank and can be removed from the bottom of the tank about once a year.

JAS. G. BENNETT,
Clarkston, Mich.

EDITOR'S NOTE—
This suggestion might be improved by placing tank used as a grease trap outside of the basement. Though it would require ex-



A Tank Placed in the Waste Line Serves as a Trap for Grease Which Would Interfere with the Action of the Septic Tank.

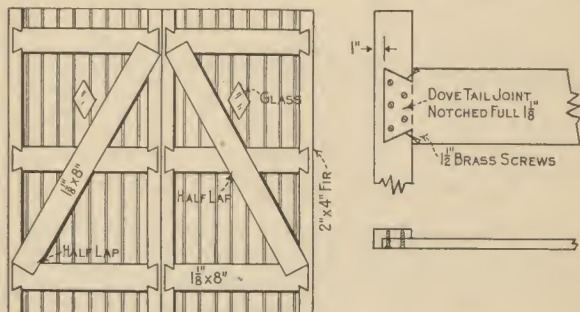
tra work sinking the tank in the ground there would be no danger of disagreeable odors getting into the basement.

Sagless Garage Door

IN building garage doors, I make them substantial and sagless by building them as shown in the sketch. For the top, bottom, and center rails, I use $1\frac{1}{8}$ " x 8" W. P. I mark and cut the wedge-like pin in the ends of each cross rail and then mark the corresponding notches in the 2 x 4 stiles the full $1\frac{1}{8}$ " depth and set the cross pieces in place. You are then ready to mark the brace. Set the brace diagonal from meeting stile to jamb stile and mark it. Then cut it and fit it in place and put it together with $1\frac{1}{2}$ " brass screws.

For the covering use 1 x 6 C. B. W. P. sheathing screwed in place with $\frac{1}{4}$ " brass screws.

JOSEPH DOCIMO, Cos Cob, Conn.



According to Mr. Docimo, This Type of Construction
Produces a Sagless Door.

Clean White Basements

BASEMENT walls when made of poured concrete or concrete block can be given a permanent coating which also helps to damp-proof, with white non-staining cement.

Scrub the walls clean and keep them saturated just below the point where the application has a tendency to run. Mix the cement with water to the consistency of thin batter, not too much at a time, say about one gallon. I use a granite kettle or bucket because it is easy to keep clean. Keep the mixture well stirred. Apply heavily with an old stubby paint brush. As soon as the first coat has set apply another.

This is also an excellent treatment for areaways.

The ordinary basement will require one-half to one bag of cement and one to two days' labor depending upon its size. The treatment is very economical and absolutely permanent.

I believe this detail returns bigger dividends for the expenditure than any other wrinkle I have employed.

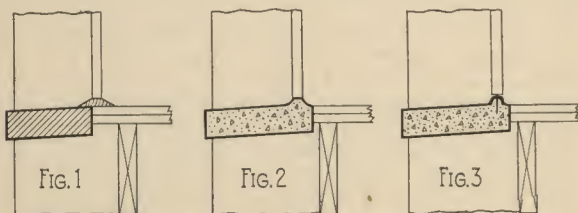
Good cement colors may be added for tinting, but this will usually require a third coat and should not be added to the first coat.

R. R. FLING, Columbus, Ohio.

Rot-Proof Thresholds

IN the August issue I found described a method of fitting thresholds which I have used for more than forty years. This suggests that some other ideas I have about thresholds may be worth while.

Fig. 1 shows the usual way of placing a threshold over a stone door-sill. It is impossible to keep the water from penetrating under the outer edge, causing curling and rotting, and frequent renewals are necessary. In this part of the country, cement sills formed in place have largely superseded the dressed



The Old Way and Two Improved Methods.

stone, and when molding these, it is easy to make them of the shape shown in Fig. 2, and dispense with the wood entirely.

Some years ago I had left on my hands a number of galvanized corner beads with anchors on the back, intended for the edges of concrete steps. As they had 1" radius, I found them too cumbersome for this purpose. Set in as shown in Fig. 3, they make an excellent metal wearing surface for a threshold, especially suitable for garage doors.

J. A. HAUGHEY, Burlington, Colo.

Brace Gives Greater Strength

I AM contributing a sketch of a brace I have used for a number of years and which has merits, where the maximum strength is required with the least material.

To frame: tack in position on studding, and with sharp pencil mark above and below 1x6 where it crosses each studding; also where it crosses toeplate at bottom and corner post at top.

This gives the marks necessary to gain in on studs, toeplate and corner post.

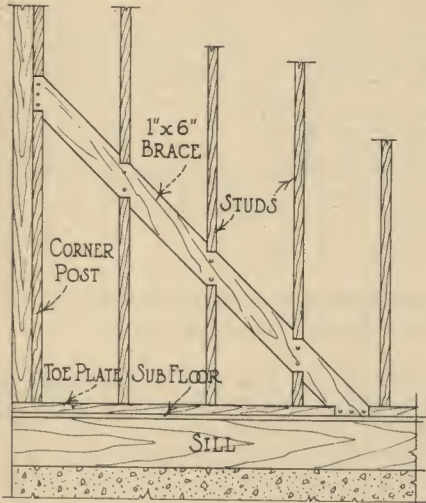
Now reach over 1x6 with sharp pencil (being sure it is resting against all studs), and mark it accurately on each side of studding, also at top of toeplate and inside of corner post. This gives marks necessary for notching 1x6 brace to fit as shown in sketch.

Now remove, and with try-square square over each stud at lowest point of top mark and highest point of bottom mark; also the two shortest points of marks crossing 2x4 on corner

post and toeplate. Saw square across (as marked with try-square) and remove to receive 1x6.

Notch 1x6 square across with stud marks, from shortest side at top and shortest side at bottom; this makes notches fit gains in studding, toeplate and corner post. Be sure to leave 1x6 brace $1\frac{5}{8}$ inches longer than last mark shown at corner post and also at toeplate so it will lock in corner post and toeplate as shown.

W. T. MORGAN, Neodesha, Kans.



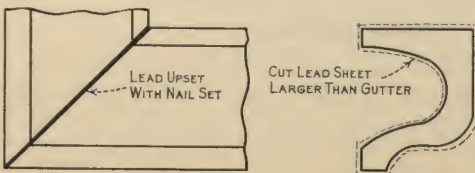
At Left — Notched
Braces Give Strength.

Cure for Leaky Gutters

JOINTS in wood gutters have a tendency to leak if some method is not used other than filling the joint with paint or white lead.

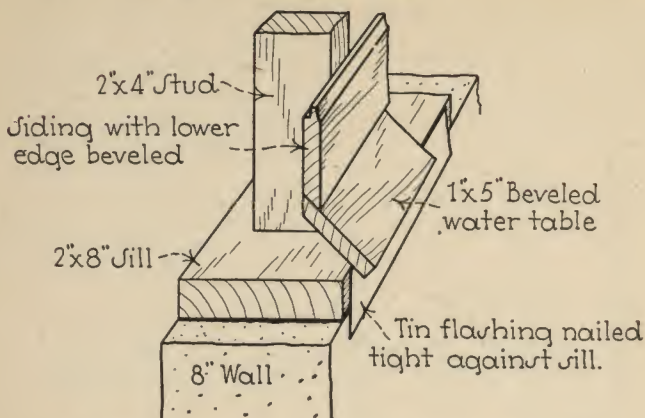
My solution of the problem is to cut a piece of sheet lead just a little larger than the size of the gutter and insert in the joint. After the gutter has been securely nailed to the building, upset the lead sheet by means of a nail set and hammer, thus wedging the metal into the joint very tightly and firmly so that it will not come out as white lead often does.

ROY H. BETTS, Seattle, Washington.



Sheet Lead Is Used to Prevent Gutter Leaks.

Keeps Garage Walls Straight



This Method of Building Garage Walls Keeps the Concrete Wall from Turning Out from the Weight on It.

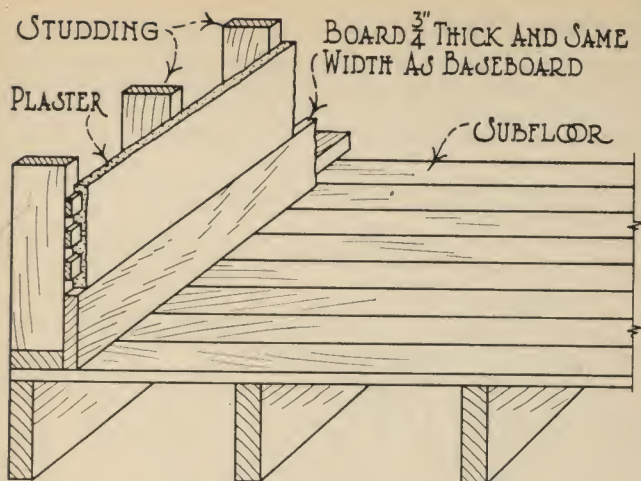
SOMETIME ago I discovered a good way to overcome the turning out of garage walls due to all the weight being on the outer edge of the wall, as it is usually built. It is customary to lay an eight-inch wall with a six-inch sill and then set two by four studs on the outer edge of the sill. Often, too, the garage is filled in with dirt or cinders considerably higher inside than the outside ground level and on top of all this swinging doors are used.

My practice is to lay an eight-inch wall with a two by eight sill on top of it, the outer edge of the sill even with the outer edge of the wall. I set two by four studs on this sill, centering them and nail a five-inch beveled watertable on before starting to put on the siding. A strip of flashing can be nailed on under the water table to cover the edge of the sill and close the crack between the sill and wall. The whole method is clearly shown in the accompanying sketch.

WM. H. HARTZLER, Marshallville, Ohio.

For Nailing Base-Board

IN the November issue, the Practical Job Pointers Department contained an item on nailing base-board. This method was all right but here is a better one. Nail a strip of $\frac{3}{4}$ -inch board to the studding, fitted down against the sub-flooring. This board should be the same width as the base-board. The $\frac{3}{4}$ -inch thickness is the same as that of the lath and plaster so that this board serves as a guide in applying the plaster.

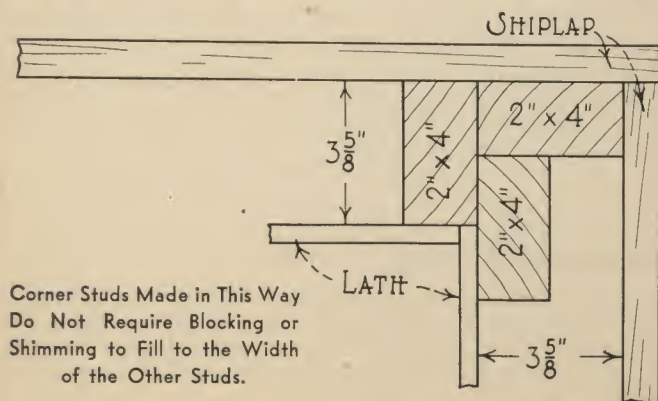


The Board Nailed to the Studs Forms a Base for Nailing the Base-Board.

This forms a nailing base for the base-board so that it can be nailed securely at any point without trying to nail to the studs. It also serves to butt the finish flooring against and gives better results and easier work in floor laying.—E. K. STEIN.

Improved Corner Stud

I HAVE noticed, from time to time, different ways of applying corner studding. I am enclosing a sketch of a method I use and find very satisfactory. This corner stud is made



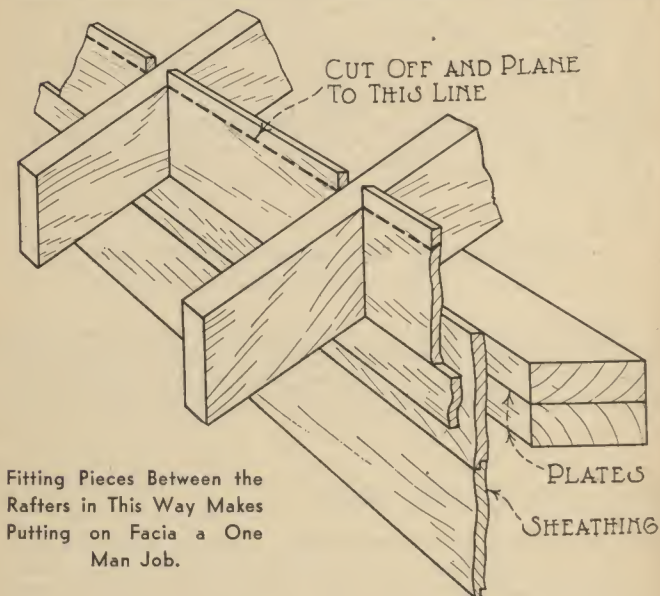
Corner Studs Made in This Way Do Not Require Blocking or Shimming to Fill to the Width of the Other Studs.

of three pieces of two by four studding spiked together in the manner shown in the sketch.—R. C. PARSONS, Eugene, Ore.

To Make Tight Facia

HERE is a method of cutting and putting on facia which I find has many advantages over the old method of using a full board and makes it a one-man job. It also takes the twists out of the rafters. I nail a one by two or one by three piece tight up under the rafter projection. I cut, on the ground, some one by five material into two foot lengths, marking the ends square.

I now take these one by five pieces up on the scaffold and



mark, cut and nail them, between the rafters and snug down on the one by two piece under the rafters. They will stick up above the rafters. Laying a square edgewise on top of the rafters, I mark across and then chop and plane down to the line. By cutting the one by five pieces square and a little long, an airtight job can be obtained.

FRED E. SUPPUS, Auburn Heights, Mich.

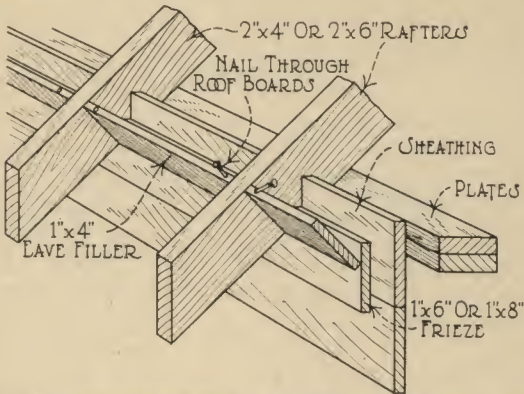
An Air-tight Open Cornice

I AM going to pass along an idea for making an open cornice air-tight. Take a piece of 1 by 8 or 1 by 6 and notch it to receive the rafters, about $\frac{3}{4}$ to 1 inch deep. Push this piece up under the rafters so that the notches fit tight against the rafters.

Now take a 1 by 4 or 1 by 6 piece, according to the width of the rafters, and fit it in tight between the rafters and the

lower edge, outside the frieze board, but flush with the rafter underneath. This makes an overlap and a tight job.

The last mentioned pieces are put in square across the rafters and not plumb with the building. This makes it possible to use pieces the same width as the rafter, saving lumber and making a neat job.



This Construction Makes an Air-Tight Open Cornice Job.

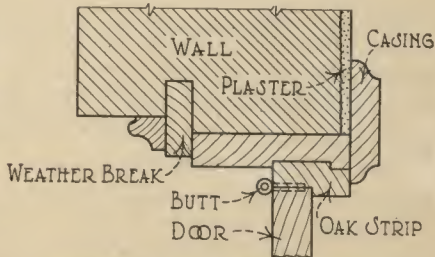
By nailing the eave filler square with the rafter it is easier to get a good paint job. Where there is a wide cornice and steep pitch, the old method of nailing the filler plumb makes a difficult paint job.

R. T. GRAVROK, Vermillion, S. D.

Recessed Outside Doors

FOR the sake of appearance, and as a protection to the door, it is often desirable to use a form of construction that will permit an outswinging door, or pair of doors, to be hung as deeply in the doorway as possible.

This recessing of the door adds to the appearance of any entrance and often provides enough depth to afford some shelter to a person waiting to enter in rainy weather. Then too the door is more protected against the effects of rain and sun. The sketch shows how such a recessing job can be handled.



Outswinging Doors Can Be Recessed in This Way to Advantage.

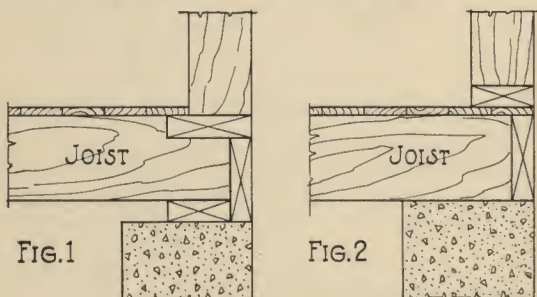
OLAF BROSTROM, 3725 Valentine Road, Kansas City, Mo.

Two Types of Construction

IN a recent issue of THE AMERICAN BUILDER AND BUILDING AGE, Arthur Morgan of Perryton, Texas, submitted a sketch and an article explaining the construction he uses in building granaries. In this, we assume he is showing the type granary used on an average good-sized farm in his locality.

In this day of keen competition, when we are striving so earnestly to design and build good buildings for the lowest possible cost, I wish to humbly submit my viewpoint on the subject.

Surely, everyone will agree that Mr. Morgan's method as shown in Figure 1, is good construction. In my estimation the Minnesota style, at some considerable saving, will do just as well. In Figure No. 1 some carpenter labor is used in notching the joists to receive the 2x8 plate. Note in Figure 2, a 2x6 plate is used instead of a 2x8 and that the 2x6 laid on top of the foundation is dispensed with. In Figure 1 the floor board forms a pocket between the studs which causes some



Two Types of Joist Work.

inconvenience in cleaning out the grain. Since both types, of course, depend on clever nailing for good results we can pass up this part.

Now then, assuming that the joists are not to be overloaded as far as bending is concerned, is there anything wrong with the construction shown in Figure 2?

J. R. PETERSON, 3339 Bryant Ave., No., Minneapolis, Minn.

Steel Rail for Support

MY Sketch No. 1 shows construction that is commonly used, and often results in an unsatisfactory job. When this wood construction is used, it is likely to be full of moisture by the time the building is under roof, and usually remains in this condition, more or less, until plastering is finished, and finished floors and interior trim is in place. Then when furnace is in use for a time, the shrinkage that takes place causes sagging and warping of the wood girder, breaking of the plastering, joints will open in woodwork around the base and floor, and in general an unsightly, unsatisfactory job.

My Sketch No. 2 shows construction which eliminates these faults and makes a much better looking job, as well as a less expensive one, as it is fire-proof, and will not decay.

It is satisfactory in cases where standard steel I-beams and colum supports are not easily available.

Top ends of steel pipe columns are cut out to fit over the steel rails, by use of acetylene torch. The steel rails that I usually use are 65 lb. Columns can be set 10 or 11 feet on centers, and will carry a full two story residence. It is less in the way of plumbing and hot air pipes.

JOHN L. STEEL, Wellston, Ohio.

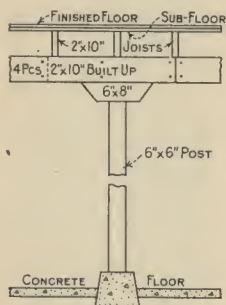


FIG. No. 1

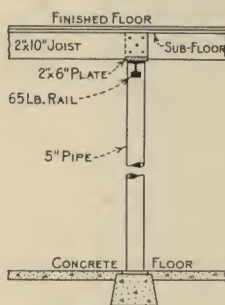


FIG. No. 2

At Left Is
Shown Method
of Support by
Steel Rail.

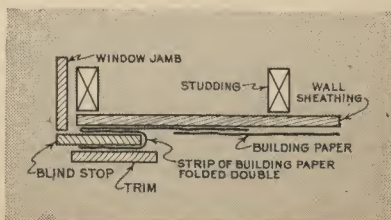
Keeps Out Wind

DESCRIBED below is a method I employ on windows exposed to much wind, in frame houses. The surface of the wall is never perfectly flat, consequently the blind stop does not make a good joint and press tight on the tar paper strip usually inserted. One can generally insert a knife blade in places in the crack, which causes drafts (serious in a N. E. gale such as we get every winter).

By using a wide folded strip as illustrated, well lapped under the tar paper on the walls with the other edge between the blind stop and trim, a pocket is formed under the blind stop and the crack sealed.

W. T. WALKER, Victoria, B. C.

W. T. Walker Shows
How He Wraps Building
Paper to Keep
Out Wind Leakage
Around the Window
Frame.



Weathershield Door

I AM enclosing some photos of my new exterior door weather protection—something to take the place of the storm door. Outside of weatherstrips, little thought has been given to the protection of outside doors. We have storm windows for windows and receive benefit from the air space as insulation, but homes without vestibules have just a single thickness of material between it and outside (the wood door itself). This door being



Door Protected by Weathershield Which Is Attractive in Appearance of wood, an expanding and contracting material, there can be little wonder that contractors and carpenters have headaches from trying to keep outside doors in the door frame because of the twisting and excessive expansion and contraction. Any wood with zero on one side and 80° on the other side is bound to twist; they make the curve in barrel staves that way.

Storm doors have been elevated from the dark ages to the present storm and screen combination door now made and sold in considerable quantities. I see that the old type of batten and high light doors are listed in catalogs and are being sold.

The home builder very carefully selects his architect to design his house, that it be practical, architecturally correct and look well. They spend many hours together to this end. Then later this same home builder goes down to the department store and buys a combination screen and storm door (absolutely foreign to the architectural scheme of his house) and covers his good looking entrance door with it for 12 months of the year.

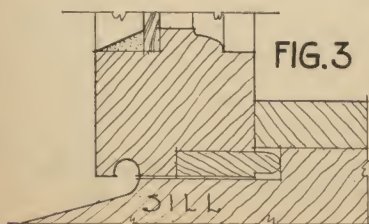
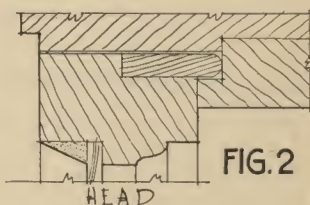
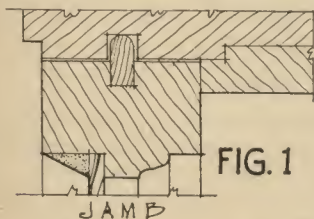
His guest approaches his door (his token of welcome which now is covered with combination storm door) and is rudely asked to step back and down the brick steps while he, the home owner, swings outward his combination storm door. This can be very dangerous in icy weather. The screen door in summer is not as bad because it can be seen through, talked through, and again it is rather unlikely there would be any ice in summer.

I have built a "weathershield" made of wood and an insulating material and fastened to the permanently hung door, thereby swinging with it. There is no additional hardware to manipulate. Its features are a single unit to pass by or through in enterling, it has insulation plus air space, is weathertight before the permanently hung door, can be left on permanently or used as a seasonal appliance and can be used to considerable advantage in remodeling.

EDWARD E. BENSON, Providence, R. I.

Makes a Tight Window

A HARDWOOD weatherstrip which has proven very effective in making wood casement windows weathertight is detailed herewith. It is set into the sash so as to touch the back of a plow in the frame, the plow being enough wider than the strip so as to provide space on each side in which air can circulate. Wind-driven rain will not penetrate past this strip because the moving air which gets to the space around it is caused to whirl backwards. The hinged side of the sash should have the strip set in the center of the sash as shown in Figure 1. The other three sides should be made as shown in Figures 2 and 3. Application of the weatherstrip to a new narrow-stile type of sash with dove-tailed corner construction developed by the millwork specialists of the West Coast Lumbermen's Association is shown. S. H. EVANS, 404 E. Howell, Seattle, Wash.

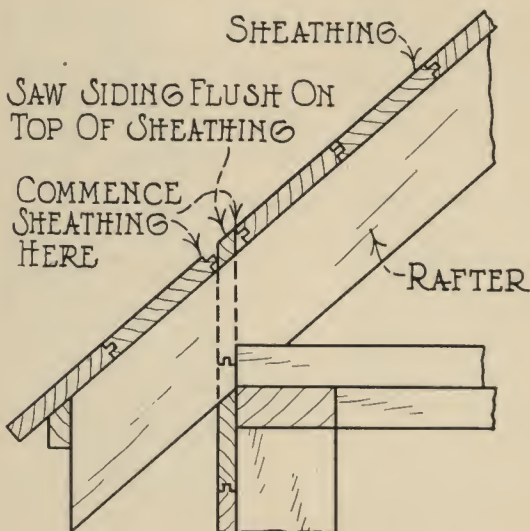


How Weatherstrip Is
Applied to Make
Wood Casement Tight.

Building Tight Cornices

THE sketch shows a method of building a neat cornice which is very tight and which can be used on many buildings, whether sided vertically or horizontally. Let the siding run a couple of inches above the rafters, fitting it well around the rafters. Commence sheathing the roof just above and below the siding, then saw off the siding flush with the top of the sheathing.

ARNOLD E. MILLER, Agosta, Ohio.

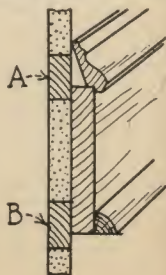


A Simple Method of Constructing a Neat and Tight Cornice.

Grounds for Plaster Guide

YOU will notice in my sketch there are two grounds $\frac{3}{4}$ inches by $1\frac{1}{2}$ inches (A, B) nailed to the studding before plastering. This gives the plasterer a guide. Where a white or swim coat is used, the plasterer as a rule does not get very close to the floor because he is afraid of getting his trowel dirty. The result is that there will be no plaster within an inch or two, and this causes the base board to turn in at the bottom, out of plumb. It will also leave a crack between the base board and plaster on top of the board.

EDWIN W. HARRIS,
Contractor and Builder,
Sunbury, Pa.



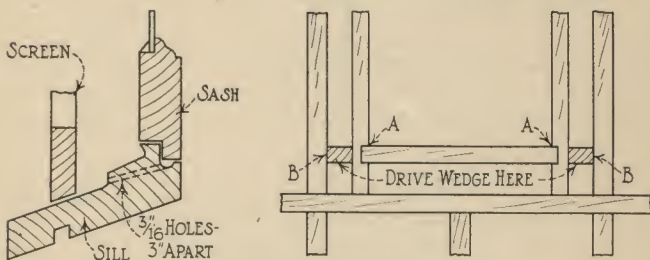
Window Helps

WE often see details of casement windows that swing out. I don't believe many builders experience any difficulty with out-swinging casements. The "swing-in" casements are very much preferred on account of outside storm-sash and screens, but it has always been a problem to make them water tight and stand hard driving rains.

The sketch below features more slope on sills, and the holes through sill, drain out any water which might come through. This sill can be run 'on a 4-side moulder in one operation, running face down.

Sketch at right shows how to fix a window frame so as to make it water tight. Point "A" shows the joint that causes so much leakage, and they don't know where it comes from. This joint sometimes opens up when nailing on window stop. We simply drive a block that is slightly wedged at point "B." We also set our window stool in white lead.

AUGUST WESSLIN, Barron, Wis.



To Make Windows Water Tight.

A Woman's Viewpoint

ALL mothers enjoy the use of a small balcony on the second floor, for instance, over your back porch where you can give "Junior" a sun bath or sun and air heavy bedding after he has had the measles. This is better than to carry things down stairs into the yard to sun.

Such a balcony adds very little extra cost, using a practically flat roof and a door instead of a window to enter.

Another important point is a permanent attic stairway, even though you say we can't spare the room in such a tiny house. By planning carefully, putting it directly over the main stairway to the second floor, it doesn't take up much room. Certainly it is worth it to the housewife.

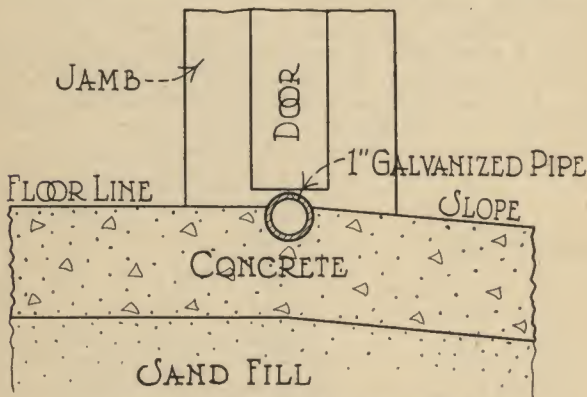
After children have grown up and left a home, we often would like larger rooms and wish we could take out a partition here and there. It is well to lay floors first and plaster walls, then put in the partition so it can be easily torn out and then the two rooms thrown together.

MRS. E. F. SMITH, Abingdon, Va.

A Garage Door Threshold

AN excellent metal threshold for garage doors, or any doors with concrete sills, can be made as shown in the accompanying sketch. This threshold consists of a piece of 1-inch galvanized pipe, cut to the full width of the door opening between the jambs. Slightly more than half its diameter is buried in the concrete sill, which holds it firmly in place, permanently.

With such a threshold in place, the door can be fitted with a minimum clearance at the bottom without causing the friction



A Garage Door Threshold Consisting of a Pipe
Has a Number of Advantages.

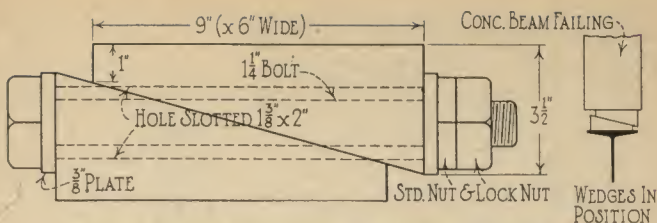
that would result with a flat threshold. Gravel, stones and dirt will not lie on this threshold and hinder the closing of the door. **BUELL S. HUNSBERGER**, 1401 Johnston St., Grand Rapids, Mich.

Bolted Wedge Saves Money

RECENTLY an inspection of a reinforced concrete building, housing a high school auditorium, disclosed trouble in the wall columns. The framing consisted of long span concrete beams, spanning entirely across the building, a distance of approximately fifty feet.

A consulting engineer, retained to make an investigation, reported that the beams were throwing high bending stresses into the wall columns. Some cracks had already formed.

Owing to financial conditions the engineer was compelled to limit his expenditure to an absolute minimum consistent with safety. A comparative study resulted in a decision to place a line of steel girders down the center of the auditorium supporting the concrete beams at their centers only. Steel columns on independent footings were provided under every fourth concrete beam.



Sketch Showing Combination of Bolt and Wedge Which
Proved Very Satisfactory on Repair Job.

The girders were required to pick up the load at each concrete beam and the best method of accomplishing this presented a problem. It was desired to avoid lifting the concrete beam and it was important that a method be followed which would permit of equal bearing pressures at all supports after the steel girder was in place and all permanent loads acting. This implied an easily controlled method for picking up the load and one which could be depended upon to take up the load gradually.

Wedges at once suggested themselves but simple wedges did not solve the problem. Finally the combination of wedge and bolt was adopted, using wedges as detailed on the accompanying drawings.

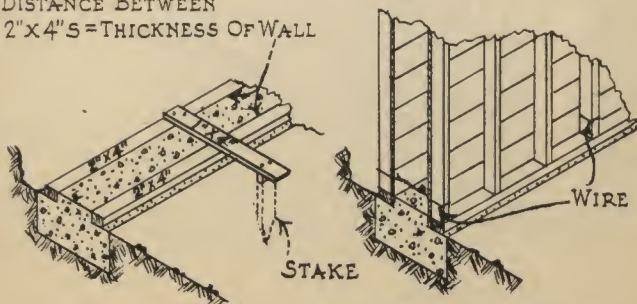
H. D. HILBORN, Houston, Tex.

Footings Simplify Form Work

THE method of construction illustrated in the sketch saves a lot of labor, I find, and should be interesting to many others. By using a form like the one shown, when the footing of a foundation wall is put in, the work of erecting the foundation forms is made easier. This keeps the bottom of the form perfect and eliminates the need of the usual wooden spreader and the lower brace. It is not necessary to make the footing perfectly level.

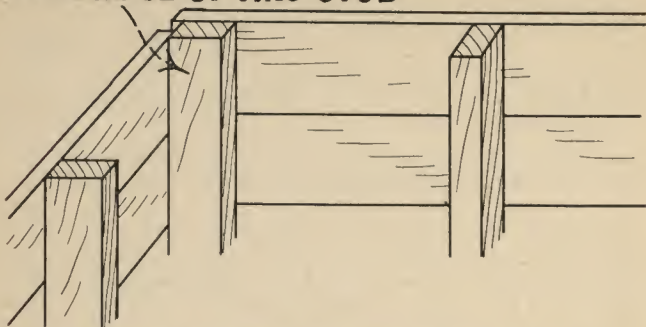
EUGENE T. MARTIN, 6 Harmon St., White Plains, N. Y.

DISTANCE BETWEEN
2" X 4" S = THICKNESS OF WALL



Building Footings Like This Simplifies the Building
of the Form for the Wall.

SHEATHING NAILED $\frac{1}{4}$ " BACK FROM EDGE OF THIS STUD

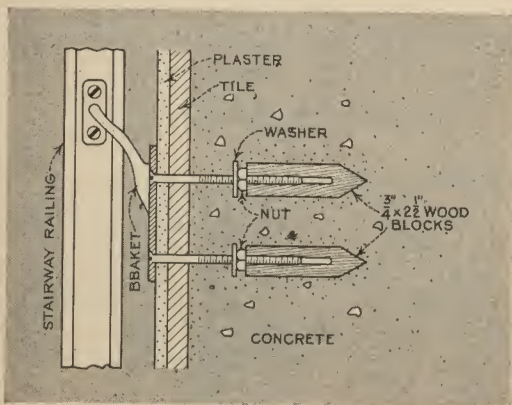


A Basement Form Built in This Manner Can Be Removed with a Minimum of Labor and Wasted Material.

Forms for Concrete Basements

WHEN making concrete forms for small basements, where the sheathing is used full length, I let the edge of the corner stud extend about $\frac{1}{4}$ of an inch beyond the ends of the sheathing on one side. This side is placed between the other sides and the sheathing of the other sides is cut $\frac{1}{4}$ of an inch short of its surface. The opposite side is set in the same manner. It takes no longer to make such a form and it saves both time and material when removing it.

ELLIS COOK, 234 S. Nickolson Ave., Monterey Park, Cal.



This Bracket Won't Pull Out.

Stair Rail Bracket

I AM enclosing a drawing of how to fasten stair rail brackets into brick, tile or concrete wall.

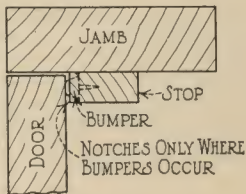
Make a block $\frac{3}{4}$ inches square, $2\frac{1}{2}$ inches long, bore a hole $\frac{1}{8}$ inch in diameter (do not bore hole through), place a washer on the bolt, then run on the nut so that about a half-inch of the threads protrude out, then screw on the block of wood up to the nut. This will have to be done after the bolts are in the bracket. Fill the hole where the bracket is to be placed with concrete, insert bolts with bracket on into concrete, and let set. After concrete is hard and firm, tighten up on bolts with a screw driver and you have a bracket that is fastened to stay firm.

C. R. SCHULTZ, Menagha, Minn.

Deadens Screen Door Noise

A VERY cheap and effective method of sound deadening slamming screen doors is to use 3 or 4 ordinary small round rubber toilet seat bumpers. Cut notches into the door stop and drive the bumpers into these notches so that only the very tip comes into contact with the door, as the sketch indicates. Tools required are only a chisel and hammer and the total cost about two cents, with about ten minutes of time consumed for each door.

PHILIP KUTZ, 2548 S. Bronson Ave., Los Angeles, Calif.

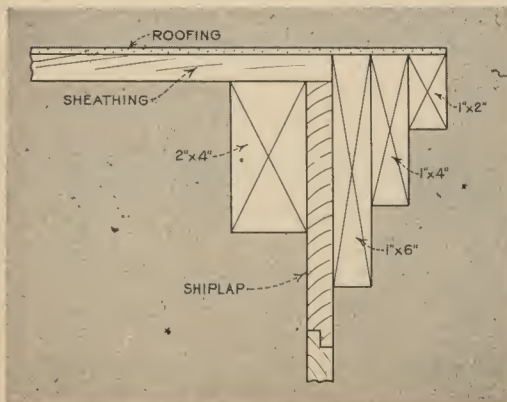


Rubber Bumper for Screens.

Tight Cornice

I AM sending you a sketch of a cornice I used instead of the large 5-inch crown molding on the English style houses. I have been using this construction for several years and find it easier to put up, and it is absolutely airtight and leakproof.

HENRY J. STEELE, Rapid City, S. Dak.

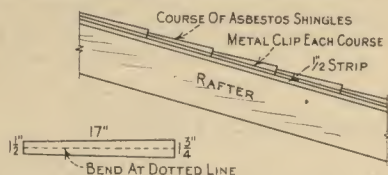


At Left Is a Method Recommended by a Builder to Give a Tight Cornice.

Weathertight Roof Edge

I AM contributing a sketch showing how I apply asbestos shingles.

The average roofing man cuts asbestos shingles flush with sheathing, or projects it $\frac{1}{2}$ inch over the edge. This exposed edge is bad as wind and water can get under it.



Galvanized Iron Used at Roof Edge.

I cut pieces of galvanized iron the length of exposed shingle edge, bending it in to lap top of shingle about $\frac{1}{2}$ inch on top and forming it so that lap comes over edge and will form a straight line upon mold or rafter.

This gives a better and heavier roof, and entire edge is weather tight. Form with two pieces of galvanized iron as shown.

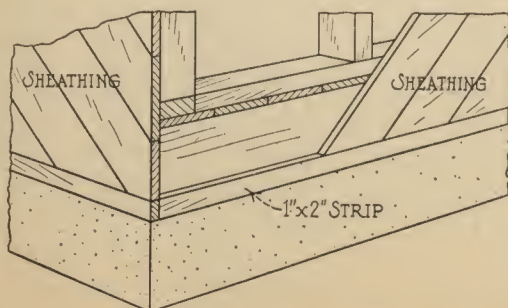
A. BAUHOF, Lockhart, Texas.

Tight Sheathing Joint

I AM enclosing a drawing that shows how sheathing should be nailed on, so as to stop the draft from entering the cracks when put on a 45 degree angle.

I use a 1 inch by 2 inch strip, nail this on the sill even with the bottom, then fit the sheathing on to the top. This stops the cold air from entering between the walls. I have used this plan away back in the "eighties." All those I built for say it makes a much warmer house.

C. R. SCHULTZ, Menagha, Wadena Co., Minn.

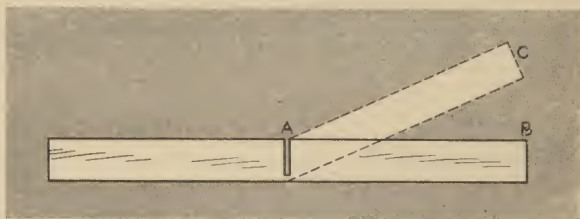


To Make a
Tight Joint
at Foundation
Line.

Cuts for Bending Board

USE and recommend the following method to find the distance to space the saw cuts for bending a board to a certain arc: First, find the radius of the circle of which the arc is part and make this distance A-B. Make your first cut at A and bend the board until the cut closes on the top, and the distance from B to C, measured from top of board to top of board, will be the space between the saw cuts. If cuts are spaced accurately and of uniform depth, it will be found that when the board is bent, until all the cuts close on top, you will have the desired arc.

J. E. ARAVE, Lava Hot Springs, Ida.

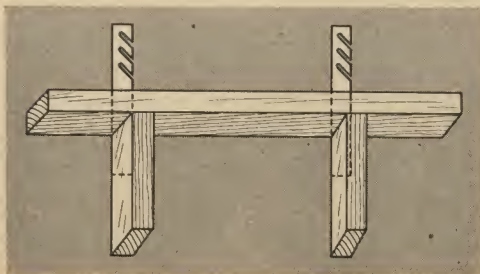


How to Notch Board to Permit Bending Is Shown.

Roofing Brackets of Strap Iron

AM enclosing a sketch of roofing brackets which I have used a number of years to hold 2 x 4 footholds in place when putting on asphalt shingle roofs. I use a piece of 2-inch band iron about $\frac{1}{8}$ -inch thick and 18 inches long which is notched on one end as shown in sketch. This is nailed on the under edge of a piece of 2 x 4 about 16 inches long. The brackets can be safely hooked over nails driven into the roof boards and after the roof is completed, they can be removed by hitting them on the bottom with a hammer, leaving the nails hidden under the course of shingles.

RONALD E. MILES, Ellicottville, N. Y.



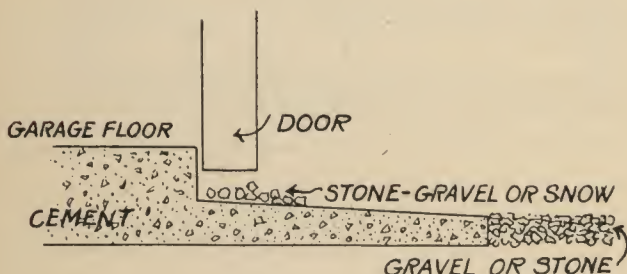
Strap Iron Hooks Hold This Roofing Bracket in Place.

Another Garage Door Idea

BECAUSE of having had considerable experience with repairing garage doors that had been affected by snow and ice piling up at the bottom, I am particularly interested in ideas showing how to keep snow and rain out of garages.

With the apron only $\frac{7}{8}$ inch lower than the floor and the door just clearing the apron, when the door is opened, snow, or crushed stone such as is often used on driveways, gets between the door and the concrete and the door has to be forced in order to lock it. This strains the door and hinges.

Any car made today will easily pass over a two by four and so if the apron is dropped $1\frac{3}{4}$ inches the door will have about $\frac{3}{4}$ inch clearance to let the snow or gravel remain on the apron and still clear it. The door can then be closed with-

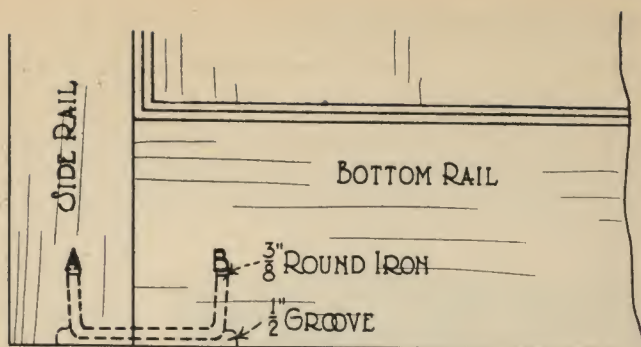


It Is Suggested That the Apron in Front of the Garage Door Should Be Dropped Sufficiently to Allow the Door to Clear Gravel or Ice That Collects.

out straining it by forcing. This also allows for any sag in the door and most doors do sag some after they have been in use awhile. S. L. BROWN, 18 Tuscan Road, Maplewood, N. J.

Tight Joints in Doors

THE sketch shows my method of closing open joints on doors and keeping them closed. Take a $\frac{3}{8}$ -inch iron rod and bend it into the shape shown at A and B. A piece about 10 inches long bent up about $2\frac{1}{2}$ inches at each end is the best length. Have the ends A and B about $\frac{1}{8}$ of an inch from perpendicular—that is, so that the “U” shaped piece is wider at the top than at the bottom.



When Driven into the Holes as Shown the Iron Rod Pulls the Opened Joint Tight and Holds It.

Bore two $\frac{1}{4}$ -inch holes in the door, one in the end of the side rail and one in the bottom rail, or top rail, as the case may be, as shown. Start the holes the same distance apart as the distance from A to B, when the joint is slightly spread. Then drive the "U" shaped piece into the holes. It will draw the joint perfectly tight and hold it permanently.

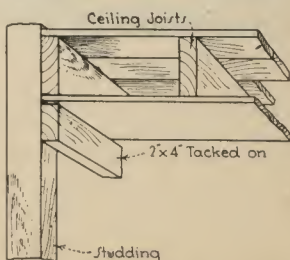
There should, of course, be a groove about $\frac{1}{2}$ -inch deep and wide in the door to receive the rod and not allow it to protrude. This can be made with a gouge or chisel.

JOHN L. STEEL, Wellston, Ohio.

This Helps in Nailing Ceiling

I AM offering a little idea which is, like most of these helpful ideas, so simple that I cannot understand why I did not think of it before. When working alone I have always found it very difficult to put up ceiling. I had a terrible time trying to hold a long piece while I nailed it. It finally occurred to me to tack a piece of 2 by 4 along the wall at each end of the room, just far enough down from the ceiling to let the material slip in on top of it. This held the end of the material up while I nailed the other end and I have had no more difficulty with such work since.

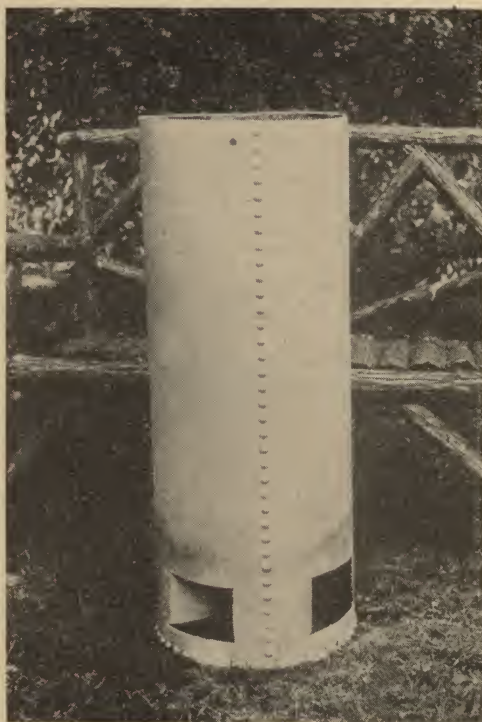
H. A. FARRELL, 813 S. Sheridan Ave., Tacamah, Wash.



A 2 by 4 Tacked to the Studs Just Below the Ceiling Simplifies Nailing the Ceiling.

Home Made Incinerator

CASTING about for material with which to make an incinerator, an oxy-acetylene welder found an old kitchen hot water boiler in a scrap heap. He found that the boiler was about twice as long as he needed for an incinerator. Taking his oxy-acetylene cutting blowpipe, he proceeded to cut it in half. He then cut off the boiler headers from each end which left him with two 30-inch cylinders of galvanized iron. He cut four rec-

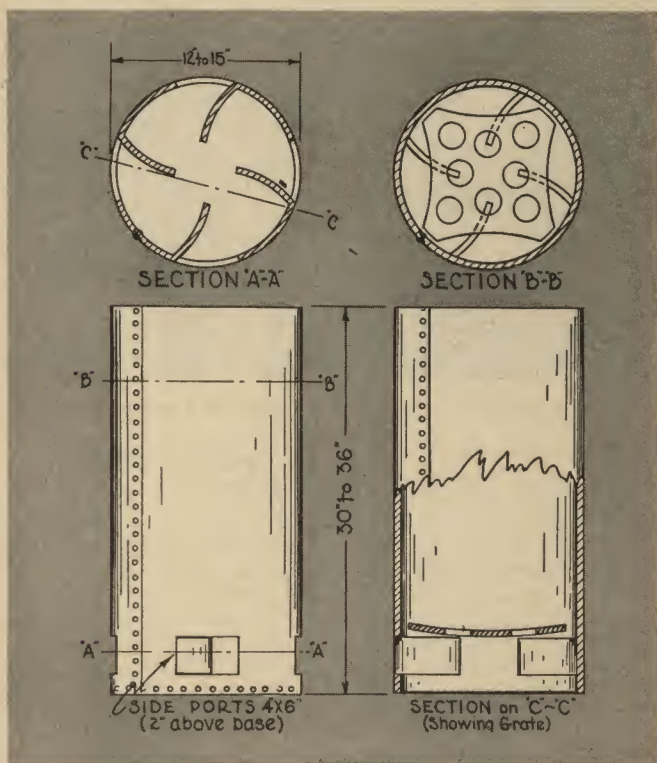


This Home Made Incinerator Was Made from an Old Hot Water Tank with the Aid of an Oxy-acetylene Cutting Blow Pipe.

tangular sections near the bottom of the boiler section and bent them in toward the center. This gave space for draft holes and at the same time acted as a support for a grate. This was done, and the four sections that were cut were then bent as shown in the accompanying sketch.

A grate was still necessary in order to complete the incinerator but rather than fabricate a new grate and weld it into place, the old head which had been cut off one end was cut into a square shaped piece with four concave edges. Then several holes two or three inches in diameter each were cut in this piece in order

to provide air space sufficient to give a good fire. This constituted the grate and was merely laid in top of the four side wall cut sections to complete the incinerator.—OWEN C. JONES, New York City.

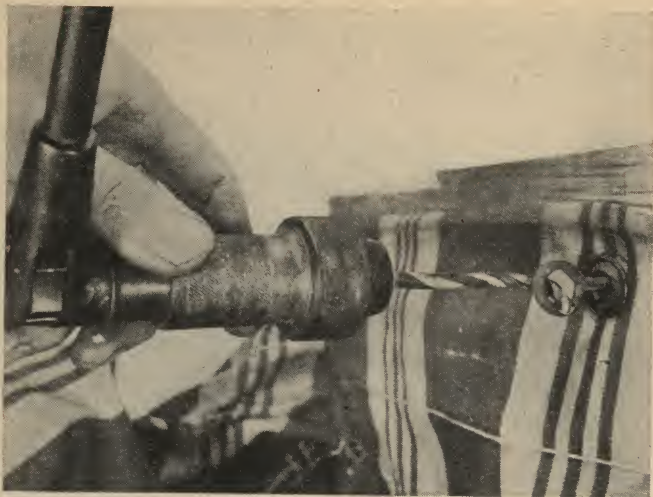


Concealed Ties

FLOWER boxes that are rather long or wide have a tendency to spread, especially if they have sloping sides, unless they are tied. Sometimes the ties are so conspicuous that they spoil the appearance of the box, a cleat across the top being a common method of tying. The box can be effectively tied with the tie entirely concealed.

The concealed tie consists of a piece of twisted wire attached to screw-eyes into the sides of the box about two inches below the upper edges. The wire is simply passed through these eyes and then twisted until it is tight and the sides of the box in perfect alignment.

H. H. SIEGLE, Emporia, Kan.



A Hooked Drill Inserted in Brace Makes It Possible to Turn Screw Eyes Rapidly.

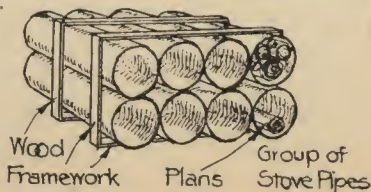
Fast Way to Turn Screw Eyes

WHEN putting up sleeping porch curtains or attaching store front awnings, the work of tightening the screw-eyes can be quickly done with the aid of a brace and bit. The bit, an ordinary stock metal drill, is heated until red and the point bent into an L. This L spur when placed in the screw-eye, as shown in my sketch, allows the race to be turned in an ordinary manner. Only a few turns of the brace will be necessary to screw the eye very quickly into the wood. Awning screw-eyes can also be quickly removed with this device.—RAY J. MARRAN, Kansas City, Mo.

Storage for Blueprints

HERE is a very simple method of keeping rolls of building plans. This consists of a series of short lengths of stove pipe, held in position by means of a light wooden frame. One end of the tubes must be sealed, or the whole so set up that the back ends of these are against a smooth wall. When used for old plans, place up close to ceiling. Old pipes can be cleaned and used but it is best to buy new ones.—MORRIS A. HALL, White Plains, N. Y.

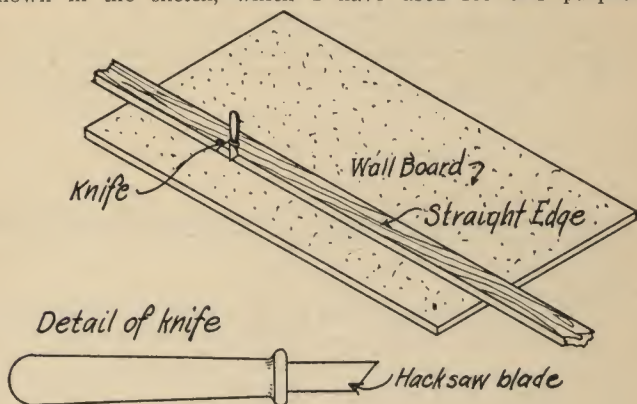
Here's a Place to Put Those Awkward Rolls of Blueprints That Clutter Up the Office.



For Cutting Wallboard

MANY carpenters cut plaster board with a saw. This is hard on the saw and is not as fast or as satisfactory as cutting it with a chisel or sharp edge tool drawn along a straight edge with considerable pressure. When a cut has been made in this way turn the wallboard over and cut the same way on the other side after which the board will break, making a straight clean cut.

I have made a knife out of an old hack saw blade, as shown in the sketch, which I have used for this purpose



A Knife Like This Can Be Used to Score Both Sides of Plaster Board Which Will Then Break Straight and Clean.

with satisfaction. I ground the hack saw blade so that it looked like a skew chisel and then sharpened it.

CARL J. ZIMMERMAN, Box 192, Waterloo, Ont., Can.

Coat Button on Plumb Bob Line



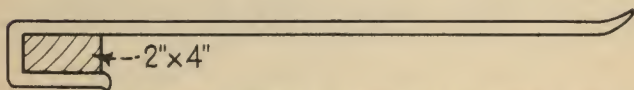
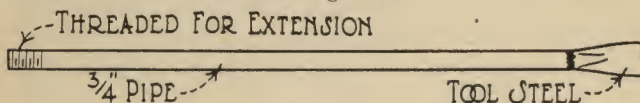
TO shorten or lengthen the line holding a plumb bob can be quickly and easily accomplished with the use of an ordinary overcoat button. The line is threaded through the button holes with a continuous loop formed at the second and third hole as shown. This loop allows the plumb line to be lengthened or shortened as desired. The use of a button for a line adjuster eliminates tying knots in the cord and makes adjustment easy.—RAY J. MARRAN, Kansas City.

Adjusts Plumb Line with Button.

Wrecking Concrete Forms

STRIPPING frames from concrete walls that are tight against a bank of earth is often a difficult job, especially cutting the wires that are below ground. The sketch shows an idea that has helped me greatly on such jobs.

I had a bar made of a piece of $\frac{3}{4}$ -inch pipe. Into one end of this pipe I had welded a piece of tool steel sharpened like a chisel. The other end is threaded so that it can be extended to any required length. With this I can reach down and cut all the tie wires below ground.



A Pipe with a Chisel Welded into One End for Cutting Form Wires Below Ground and an Improved Wrecking Bar.

I also took a common wrecking bar and had the crooked end squared to fit around a two by four, as shown in the sketch. With this it is an easy matter to twist the two by fours out.—ALBERT SAUNDERS, Box 322, Retsil, Wash.

For Drilling Brad Holes

ONE of the woodworker's problems is to find a suitable drill for making fine brad holes in hardwood. An ordinary machine drill, or push drill, breaks too easily and is difficult to withdraw from the wood. The practical workman usually falls back on using a nail, sharpened and beheaded, and perhaps filed flat on one side so that it will not turn in the chuck. This is a poor makeshift. Recently, I hit on a substitute which seems both practical and economical.

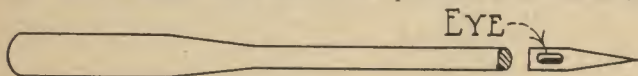


FIG. A



FIG. B

A Sewing Machine Needle Filed Like a Drill Is Excellent in Hard Wood.

Take an ordinary sewing machine needle and cut it off just above the eye, as shown in figure A. Grind it as you would an ordinary twist drill, or perhaps with a slightly longer point, so that it will not "stutter" or dance about when you place it against the hardwood. (See sketch B.) This makes a very stiff and durable drill; one that bores rapidly and comes out of the material easily.

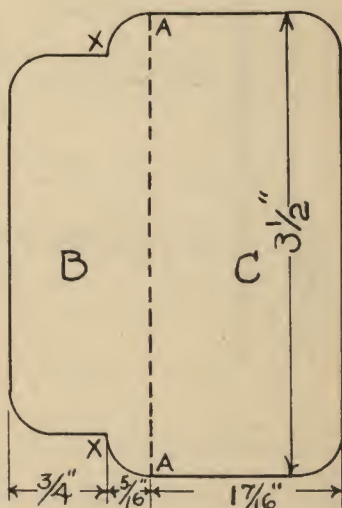
There is probably a high grade of steel used in these needles and they are highly polished with the result that they last longer and give better service.

WALTER KATELEY, 661 E. 126th St., Cleveland, Ohio.

Handy for Casing Doors

THE sketch shows a template, in the flat before bending, which I find most useful in casing up doors. Take a piece of metal three inches by $2\frac{1}{2}$ inches and on one side notch both ends in $\frac{5}{8}$ inch, back $\frac{3}{4}$ inch from the side. Now bend along the line "A"- "A" at right angles.

By placing the inside of the side "C" on the inside of the door jamb and moving the template up and down with a pencil placed at "X," the proper reveal of $\frac{5}{8}$ inch will be marked on the edge of the jamb. By placing the template over the casing with the notch on the side "B" underneath the head jamb, and marking on the top side of "C," which is over the casing, you get the proper length of the casing without any measuring.

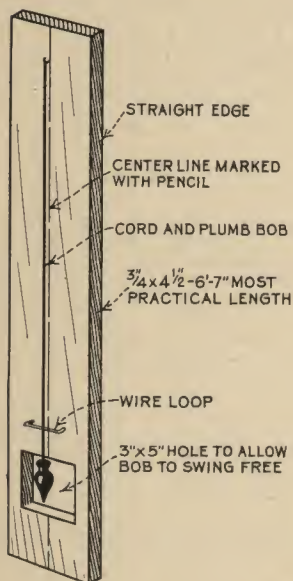


Here Is a Template Said to Be Useful in Casing Up Doors and Windows.

If the template is accurately made, both casings will be exactly the same, which so often is not the case in using the old methods. This template can also be used in casing windows flush, by placing "C" inside the pulley stile, against the head, and marking on top.—F. M. DUNCAN, Liberty, Mo.

Homemade Plumb Rule

I AM enclosing a sketch and description of a plumb rule, which comes in handy for plumbing door bucks, window frames, wall furring, framing, etc. This is more accurate than the average spirit level and straight edge, and with a little practice it can be used just as rapidly. As my drawing shows, it is simple to make and very inexpensive.—STANLEY G. GREENE, Norfolk, Va.



Simple Home Made Plumb That Is Handy to Use in Many Locations.

Regarding Knee Pads

MOST carpenters' overalls are made double at the knees. Some have the patch sewed across the bottom but the open ones are preferred because, when the patch becomes worn shaving, sawdust, etc., will lodge in the pocket so formed.

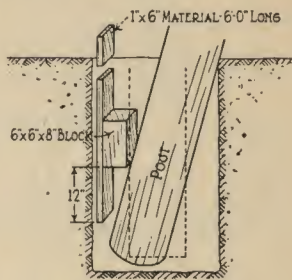
Why not just slip a rubber pad up under the reinforcing patch that is already on the overalls and fasten it temporarily with a harness safety pin, or with snap hooks and eyes at each of the upper corners? I think this would prove satisfactory.

ROBERT McRAE, Market Square, Saskatoon, Sask., Canada.

It Helps Place Poles

IN placing large posts or poles, of considerable height, in holes large enough for pouring concrete around the base of the pole, it is sometimes difficult to place the poles in the holes so that they line up. If a pole is too far to one side of the hole it is out of line. I find the handiest thing for lining up the poles is what I call a post-bucker.

This buckler is made of one by six-inch material, six feet long. A block six by six by eight is nailed to it as shown in the sketch. The pole is inclined toward the side to which the bottom is to be moved. The post-bucker is lowered till the block comes in contact with the pole, as shown in the sketch. A reverse movement of the pole will bring it into position as indicated by the dotted lines. This is a simple device but entirely effective.

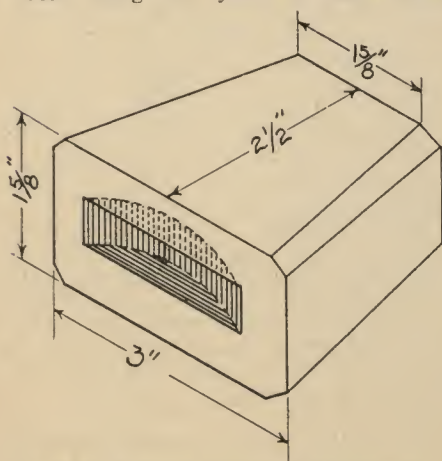


For Lining Up a Row of Posts

BERT W. CULBERTSON, Route 4, Jackson, Mich.

To Drive Window Pulleys

THE accompanying sketch shows a block which I have been using for years to drive window pulleys home.



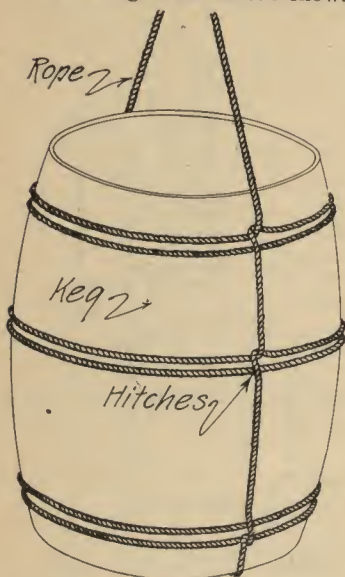
A Block of Wood Formed as Shown Here Is Useful for Driving Window Pulleys.

out to fit over the pulley.—S. J. BENNETT, Devine, Texas.

It is very easily made, but as I have never seen it described I thought I would send it in and see if it might not prove useful to others. The sketch shows just how this block is made. It is a single piece of wood. The dimensions shown give a handy size, but do not have to be exact. The end is hollowed

To Hoist Broken Nail Kegs

HALF-filled, broken nail kegs are a thorn in the side of every workman. They are hard to handle, especially for hoisting. The sketch shows the way I fasten such a keg



The Barrel-Hitch, for Hoisting
Broken Nail Kegs.

for hoisting which makes it easy. All that is needed for this handling is a rope. The hitch is simply an improvement on the old fashioned barrel-hitch well known to all sea-faring men. The rope is passed under the bottom of the keg and half hitches laid around the keg, three on each side. The first pair is laid a little above the bottom edge of the keg, the second pair at the middle and the last pair below the top edge. If the keg is in good condition two, or possibly even one, pair of hitches is sufficient. The lower ones being the ones omitted. If the keg is broken, this hitch will hold it firmly together and right side up while hoisting.—

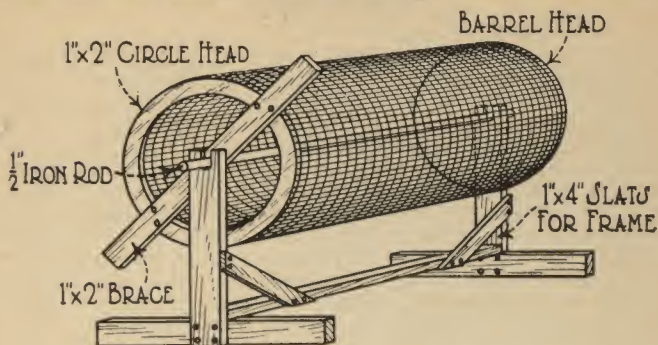
PAUL NESS, Fort Staunton, N. M.

For Screening Wet Sand

THE sketch shows the way in which I make a handy screen for screening wet sand. Wet sand is difficult to screen with an ordinary screen but with this device it is easy. I use a barrel head for one end of the cylinder and make the other end of one by two-inch stock cut out with a keyhole saw. It has the same outside diameter as the barrel head, of course.

The cylinder is made of five feet of 36-inch sand sieve wire with $\frac{1}{4}$ -inch mesh, tacked around the two heads. This makes a cylinder with one end open except for the two-inch brace, nailed across it. The brace extends a few inches at each end to serve as a handle for turning the cylinder.

Holes are bored in each head to receive a $\frac{1}{2}$ -inch iron rod which serves as an axle. The frame is made of one by four-inch slats as shown in the diagram. Hang the cylinder

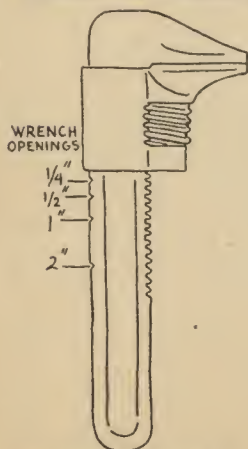


It Is Just as Easy to Screen Wet Sand as Dry If You Use
This Sort of a Screen.

in the frame as shown, place a few shovelfuls of sand in the cylinder and give it a turn. The wet sand will be screened just as easily as dry sand.—J. DAN COLLIER, Box 292, Albertville, Ala.

Handy Wrench Adjustment

TO avoid the endless aggravation of the trial and error method of obtaining different thumb nut adjustments



Marking the Wrench for
Various Openings Saves
Both Time and Annoy-
ance.

to give certain wrench openings, I cut or file notches on the handle of a wrench as shown in the sketch. The notches are spaced, on the back edge of the wrench, at the most convenient distances for the user. They are placed below the slide bar at such points that when the slide bar centers a notch it gives a certain wrench opening that is used frequently. This is simple and saves a lot of lost motion when using the wrench a great deal. The notches may be spaced as close as $\frac{1}{8}$ inch, but I have found that opening of $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ and $1\frac{1}{4}$ inch take care of the sizes of nuts most used in my work.

BERT W. CULBERTSON, 608 Commerce
St., Jackson, Miss.

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